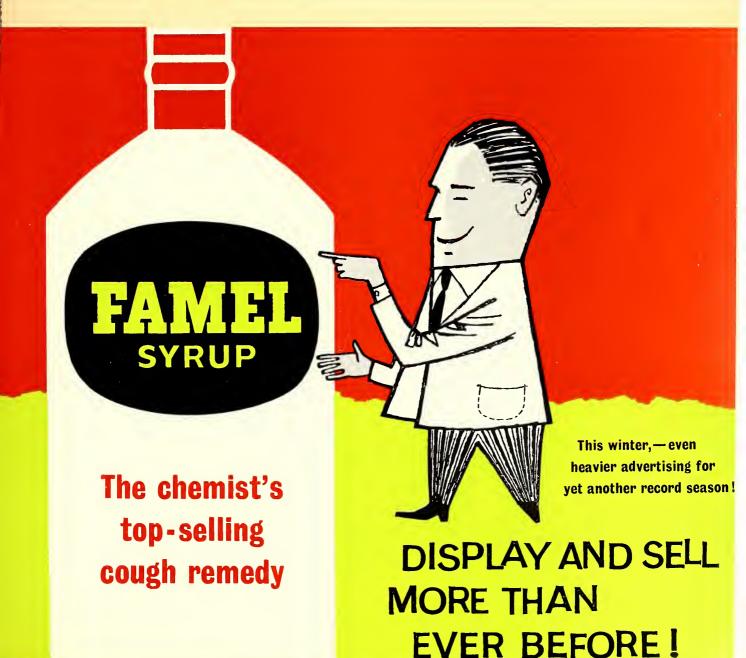


CHEMISTAND DRUGGIST

For Retailer, Wholesaler and Manufacturer

OCTOBER 10 1959

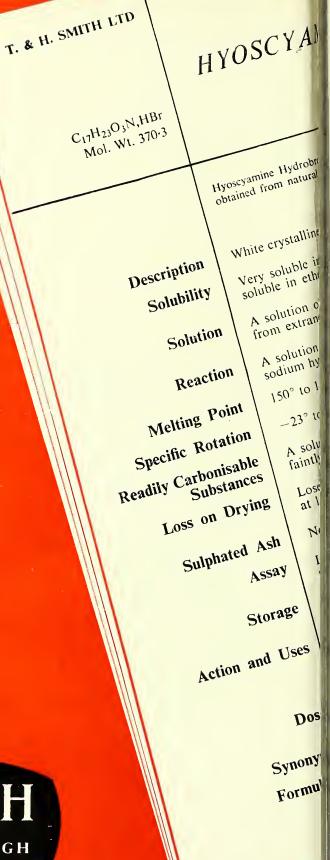


ALKALOIDS

and allied products

Specification sheets for each of the products listed are available on request.

ARECOLINE HYDROBROMIDE ATROPINE METHONITRATE ATROPINE SULPHATE CAFFEINE CITRATE **CANTHARIDIN** CODEINE PHOSPHATE COLCHICINE SALICYLATE **ESERINE SALICYLATE ESERINE SULPHATE** HOMATROPINE ALKALOID HOMATROPINE HYDROBROMIDE HOMATROPINE HYDROCHLORIDE HOMATROPINE METHYLBROMIDE HYOSCINE HYDROBROMIDE HYOSCINE METHYLBROMIDE HYOSCYAMINE ALKALOID HYOSCYAMINE HYDROBROMIDE HYOSCYAMINE HYDROCHLORIDE HYOSCYAMINE SULPHATE MORPHINE SULPHATE **PICROTOXIN** PILOCARPINE HYDROCHLORIDE PILOCARPINE NITRATE SALICIN **SANTONIN** STRYCHNINE ALKALOID STRYCHNINE HYDROCHLORIDE STRYCHNINE SULPHATE





"Don't forget the Bemax, mummy!"



BEMAX is an asset for 6 good reasons

- BEMAX is the richest natural vitamin-protein-mineral supplement containing 27% protein, the whole of the vitamin B complex, and iron—all in their natural state.
- BEMAX improves and maintains health—specially in the trying months of winter and spring.
- Doctors have recommended BEMAX for over 30 years.
- Regular advertising keeps BEMAX before the public.
- The price of BEMAX has never been raised since the war.
- BEMAX helps to keep the whole family well, is easy to take, good for both appetite and digestion.

You—and your customers—are bound to benefit from

BEMAX

STABILIZED WHEAT GERM

VITAMINS LTD., UPPER MALL, LONDON, W.6.



SPECIAL DISPLAY BONUS

Gives you 10% EXTRA ON £3 RADIAN ORDERS!



An extra 10% profit is yours in return for a fortnight's window display. This bonus is given on all direct orders of £3 and upwards (excluding P.T.) comprising any combination of Radian products, which include:

RADIAN-B Aspirin Spirit Liniment RADIAN-a Spirit Dressing RADIAN MASSAGE CREAM RADIAN SOOTHING CREAM RADIAN BATH SALTS RADIAN OVALS

Radian products are backed by advertising all the year round in the national and provincial press, sporting journals and women's magazines.

Send your order to:



Radian House, 78, Upper Richmond Road, London, S.W.15 Tel: VANdyke 1642 & 2692

SEARLE

are pleased to announce

REDUCED PRICES FOR PRO-BANTHINE

As from October 12th, the new Retail prices for PRO-BANTHINE products will be as follows:

| | | NEW PRICE |
|----------------------------------------------------------------------------------------------------------------------------------|-----------------------|-----------------------|
| PRO-BANTHINE Tablets containing 15 mg. Bottles of 40 Bottles of 100 Bottles of 1000 | 18/- 38/6 363/- | 16/3 34/9 326/9 |
| PRO-BANTHINE with Phenobarbitone Tablets containing 15 mg. of each. Bottles of 40 Bottles of 1000 Bottles of 1000 | 18/8 39/9 374/9 | 16/9 36/- 338/6 |
| PRO-BANTHINE INJECTION 1 c.c. ampoules containing 30 mg. Box of 6 Box of 25 | 4 8/6 182/3 | 43/9 164/- |

Important

Announcement

DOLS' RUB

Owing to Government restrictions on transportation of our liquid Dols' Rub which has proved so successful for some years, DOLS' VOLATALISE FLANNEL LTD. have been reluctantly compelled to instruct their research chemists to substitute a cream and they have evolved

DOLS' RUB CREAM

For a year the Company has had it tested in every possible way and are now confident that it is a product which is even more beneficial in its results than the liquid Dols' Rub.

DOLS' RUB CREAM will be on sale early October and orders can now be accepted. Retail price is 3/9 per tube. Usual terms to the Trade.

DOLS' VOLATALISE FLANNEL LTD
52 Fitzwilliam Street · HUDDERSFIELD

60 Years'
Repute as
the Family
Remedy
for
Indigestion



P.A.T.A.
Retail Prices
1/7, 3/8,
6/-, 13/9, 25/(including
tax).

BOX'S

INDIGESTION PILLS
W. H. BOX, 47 COBOURG ST., PLYMOUTH

AMBYTHENE

(BRAND OF POLYTHENE)



MEDICINE MEASURES

UNBREAKABLE-ACCURATE

with or without close fitting lids obtainable from usual distributors at 12/1 dozen with lids or 8/9 dozen without lids.

Wholesalers' supplies obtainable direct from

AMPLEX APPLIANCES (KENT) LTD.

19 DARTMOUTH ROAD, HAYES, BROMLEY, KENT

(RAVensbourne 5531)

Now nights are turning cold

BIGGER DEMAND

Now's the time your sales go up. Customers who know how effectively Besorbon nips colds in the bud, now come back for more. Sales are maintained by personal recommendation between friends.

FREE DISPENSER

Stock Besorbon by the dozen and obtain the attractive counter unit free. By displaying Besorbon boldly now, you'll gain new customers—more profit.

it's big selling for

BESORBON

REGD. TRADE MARK

MEDICINAL SNUFF

Kemsales Ltd. · Eastcheap · London, E.C.3



-CHEMIST'S DICTIONARY OF-MEDICAL TERMS 7th Edition

Prepared primarily for pharmacists, the Dictionary is indispensable also for pharmaceutical manufacturers, advertising agents concerned with the marketing of medicinal products and indeed all who have to find their way around among the multilatious medicinal compounds of modern times.

Order direct from:

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THE CHEMIST & DRUGGIST
28 ESSEX STREET, STRAND, LONDON, W.C.2

Derl

toilet soap for all who take extra care

Germicidal - Deodorant - Beautifying

ROBERTS WINDSOR LTD, LONDON, WINDSOR, NOTTINGHAM

Manufactured and packed in the Laboratories of

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Sample box gladly sent upon request from

RICHARD DANIEL & SON, LTD.

Mansfield Rd., Derby. Tel. 40671 (10 lines) and at Grosvenor St., Ashton-u-Lyne. Tel. 5161 (9 lines)

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GENEROUS BONUS TERMS ON ASSORTED ORDERS OF I GROSS OR MORE

Ask our Representative or write direct for show material and the chance to win valuable 'Premium Bond' Prizes

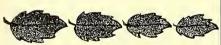


THOS. GUEST & COLTD Manufacturing Chemists CARRUTHERS STREET MANCHESTER



And again, the need for Christy's Emulsion. Protective, soothing and healing on sore or exposed skins, Christy's Emulsion is widely known and trusted. As summer sunburn is followed by winter chapping and rawness, the demand for Christy's Emulsion continues to expand. To help meet this demand, see you have ample stocks of Christy's Emulsion.

Small bottle or tube retails at 2/3, large bottle at 3/10.

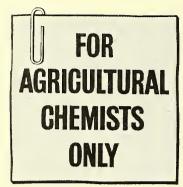


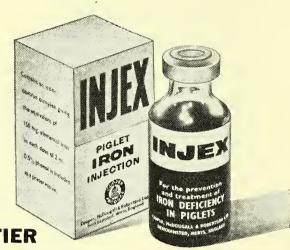
Autumn advertising for Christy's Emulsion is appearing in the gardening and farming press, and in Advertising Magazine programmes on Granada, Tyne-Tees and Scottish Television.



Christy's Emulsion

THOS. CHRISTY & Co. Limited, 152, NORTH LANE, ALDERSHOT, HANTS.





THIS SURE WAY OF **REARING MORE & WEIGHTIER WEANERS WILL BE A TOP SELLER!**

> COOPER PRODUCT

ONE-SHOT PIGLET IRON INJECTION



BREAKS LAST WEEK IN OCTOBER

Large, bold announcements will appear in all leading farming journals, including:

- * FARMERS WEEKLY * FARMING NEWS
- * FARMER & STOCKBREEDER
- * SCOTTISH FARMER * FARMERS JOURNAL
- * PIG FARMING
- * PIG PROGRESS
- * ULSTER FARMER * PIG PRODUCER
- * PIG KEEPER * PIG BREEDERS GAZETTE

New from Coopers! A one-shot intramuscular injection for piglets which definitely overcomes iron deficiency and guards against the attendant illnesses of pneumonia and scour. Farm tests have proved that injecting with INJEX is the most effective and economical way of rearing healthier, thriftier, more profitable litters. Any pigman can use INJEX-it's a quick and easy job to give every piglet its full protection. Coopers on the label means that INJEX is sure to sell. Get more information from your Cooper representative or write to the address below.

SPECIAL INTRODUCTORY OFFER with every purchase of a 6-bottle pack of INJEX retailing at £7.10.

-REE

* POWERFUL SALES AIDS READY FOR YOU NOW!

INCLUDING * LEAFLETS * SHOWCARDS

*** WINDOW STICKERS * COUNTER DISPLAY CARTONS**

Cooper, McDougall & Robertson Ltd., Berkhamsted, Herts. Est'd 1843



Pioneers in Penicillin

The new prices current from August 1st, 1959

The 'ICIPEN' V and 'PENAVLON' V range of Penicillin V preparations—the most efficient oral penicillin

TRADE PRICE

'ICIPEN' V tablets

300 mg. (0.5 m.u.)

Containers of 12...... 11/10d. each
Containers of 100..... 86/- each
Containers of 500.... 412/6d. each

'ICIPEN' V Suspension

(when dispensed)

150 mg. (0.25 m.u.) penicillin V per teaspoonful of prepared suspension.

Containers of 1 fl. oz. (when dispensed) 8/- each Containers of 2 fl. oz.

'PENAVLON' V tablets

Penicillin V potassium salt

Scored tablets (a) 125 mg. (as potassium salt)

Containers of 12 .. . 5/4d. each
Containers of 100 36/6d. each
Containers of 500 .. . 172/6d. each
Containers of 1,000 .. . 344/- each

Scored tablets (b) 250 mg. (as potassium salt)

Containers of 100 72/- each Containers of 500 343/- each Containers of 1,000 666/8d. each

'SULMEZIL' V—for combined penicillin and sulphonamide therapy

TRADE PRICE

.. 14/2d. each

'SULMEZIL' V tablets

Each tablet contains 0.5 gramme 'Sulphamezathine' (sulphadimidine B.P.) and 60 mg. penicillin V as calcium salt.

Containers of 25...... 7/6d. each
Containers of 100..... 25/6d. each
Containers of 500.... 116/- each

TRADE PRICE

TRADE PRICE

'SULMEZIL' V suspension

Each teaspoonful (3.5 ml.) of prepared suspension is equivalent to one 'Sulmezil' V tablet.

Bottles of 2 fl. oz. .. 8/- each

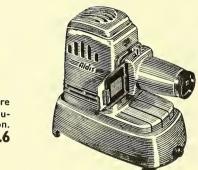
IMPERIAL CHEMICAL INDUSTRIES LIMITED Pharmaceuticals Division Wilmslow Cheshirs

Raise your average sale-

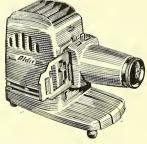
There's plenty of money about this year—it will be well worth the extra effort involved for you to stock and sell good photographic equipment, and so raise your average sale.

NEBRO products are well-known and well-advertised: the name is a guarantee of satisfaction for your customer and a safeguard for yourself. The ever-increasing interest in photography is making good equipment easier to sell at any season of the year, and particularly so at Christmas.

Stock the best equipment at the right price—NEBRO.



ALDISLITE projects a 5 ft. picture in an ordinary room, has 100w. illumination, and automatic slide ejection. £9.18.6



ALDISETTE 2 is a convectioncooled 150w. projector with 8.5 cm. f/2.5 Anastigmat lens, giving a 5 ft. picture at 12 ft. or a much bigger picture in a larger room, with 2"x 2" slide carrier. £15.15.0

150w. lamp £1.1.9.

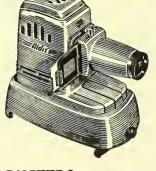
ALDIS 500 has blower cooling and 500w. illumination. Complete with 8.5 cm. f/2.5 Anastigmat lens and 2"x 2" slide carrier. £21.0.0

Also available with 10 cm. f/2.8 lens. £22.19.6 500w. lamp £2.4.6.

ALDIS 5-STAR 1000 is designed to take 1000, 750, 300 or 250w. lamp. Powerful blower-cooling, 10 cm. f/2.8 Anastigmat lens and 2"x 2" slide carrier. £29.18.6

Also available with 15 cm. lens

£34.2.6 1000w. lamp £2.19.6.



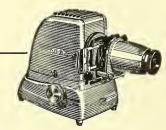
ALDISETTE 3 is a blower-cooled projector with 300w. illumination, 8.5 cm. f/2.5 Anastigmat lens, on/off switch and 2"x 2" slide carrier.

300w, lamp £1.13.0.

£19,19,0

SUPER ALDISETTE gives even bigger and brighter pictures. Takes 500w. miniature lamp specially developed for this model, has suction cooling, 8.5 cm. f/2.5 Anastigmat lens, and 2"x 2 slide carrier. £25.17.6

500w. Jamp £2.2.0.



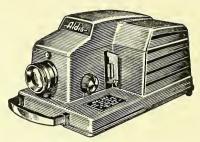
ALDIS 300 is a convection-cooled 300w. projector with 8.5 cm. f/2.5 Anastigmat lens (giving a 5 ft. picture at 12 feet) and 2"x 2" slide carrier.

£16.16.0

Also available with 10 cm. f/2.8 lens.

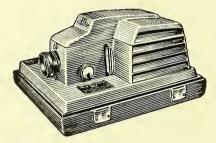
300w, lamp £1.14.3.

£18.15.6



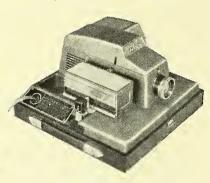
ALDIS 303 has 300w. illumination, suction cooling, Aldaspheric optical system with 8.5 cm. f/2.5 Anastigmat lens and 2"x 2" slide carrier. Complete with protective cover.

300w. lamp £1.13.0.



ALDIS AUTOMATIC has 500w. illumination, remote controls for focusing and slide changing, suction cooling, special Aldaspheric optical system. Complete with Airequipt magazine, carrying case and standard slide carrier.

500w. lamp £2.15.0.



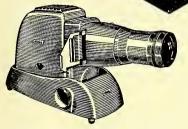
ALDIS AUTOMATIC DE LUXE has all the above features, plus a builtin interval timer which enables the projector to work itself. Complete with carrying case, Airequipt magazine, standard slide carrier and 500w. lamp. £52.10.0

£37.17.6

PLACE YOUR

ORDERS NOW!

sell NEBRO photo goods



ALDIS SUPER SIX 300 projects both 21/2 x 21/2 and 35 mm. transparencies. Maximum screen brilliance even in a normally-lighted room. With 6" f/2.8 Anastigmat lens and $2\frac{3}{4}$ "x $2\frac{3}{4}$ " slide £28,15.0

300w, lamp £1.14.3. 2"x 2" slide carrier £1.17.0.

ALDIS SUPER SIX 1000

Designed for large halls and lecture rooms, has built-in blower unit and gives 1000w, illumination. With 6" f/2.8 Anastigmat lens and 23/ x 23/ slide £42.0.0

1000w. lamp £2.19.6.



AIREQUIPT Automatic Slide Changer for trouble-free storage and projection of 2"x 2" slides. Fits Aldis projectors and many other makes. With one 36-slide magazine. £4.15.0

Extra magazines 14/9 each.



ALDIS 'MAGICOLOR' VIEWER enlarges 35 mm. or Bantam size transparencies four times. Complete with batteries and storage box to take viewer and 48 slides.



PAXETTE IL Precision-made 35mm. camera by Carl Braun of Nuremburg with f/2.8 extra wide aperture Enna-Werk Anastigmat Iens, Prontor S.V.S. 9-speed light-value shutter, and super-luminous viewfinder

£20.7.1



PAXETTE 2L has coupled rangefinder and is available with a choice of four f/2.8 lenses. Coupled wide-angle and telephoto lenses are also available. Prontor S.V.S. shutter and superluminous viewfinder.

Prices from £32.12.2



FERRANIA IBIS 44. An inexpensive, but exceptionally well-made camera, taking 12 pictures (4 x 4 cm.) on 127 roll film. Ferrania f/7.7 65 mm. acromatic lens: speeds 1/100, 1/50 £4.14.10

IBIS 34. Similar in appearance and quality to IBIS 44 but takes 16 pictures (3 x 4 cm.) on 127 roll film. £4.7.2



BAUER 88B is a double-eight cine camera with lenscoupled photocell exposure meter, Schneider Xenoplan f/1.9 lens, 4 speeds and single picture device. Parallaxcorrected viewfinder. £62.14.5



BAUER T 10 L 8 mm. projector giving exceptionally large pictures in a small room. Kiptagon f/1.4 16 mm. lens, special optical system, 12v. 100w. lamp.

T 10 S With socket for synchronised £45.0.0 sound coupling.

Protective cover 35/-



Easy to erect—sturdy construction high quality finish-remarkable value. Stands on its own feet or may be hung from picture rail or hook. In matt white or glass-beaded finish, sizes from $26'' \times 20''$ to $83'' \times 63''$.

Prices from £2.2.0



Sole Wholesale Distributors:

NEVILLE BROWN LTD. 77 NEWMAN ST., LONDON, W.I

Tel.: LAN 7161 (10 lines)

Trade Counter: 3 BERNERS MEWS, W.I (rear of building)

another big seller

National advertising campaign starts October 28th



You know from your own sales how hair beauty products are booming. It is the fastest expanding market in the beauty field, and SHINING LOOK will prove to be one of the biggest selling hair products you have ever stocked—and it gives you a big margin of profit. SHINING LOOK, the newest creation of L'Oreal · Paris, is a feather light dressing in cream form which gives the most natural radiant shine ever given to women's hair. It will appeal to all women of all ages. Remember the success of Color-Glo? SHINING LOOK will be launched with the same advertising and sales "know-how" behind it.

SHINING LOOK is from L'Oreal · Paris, the world's greatest makers of hair beauty products-you can be sure it will live up to every claim made for it, and that repeat sales will come regularly.



SHOWING 80° PROFIT

Your wholesaler can supply you on full bonus termsorder now, before the advertising starts on Oct. 28

Offer closes 30th Nov. 1959

Give this attractive one dozen display unit a place in the front of your counter



A creation of L'OREAL · PARIS



from L'Oreal-Paris



advertisement will appear in:-

Daily Mirror 6,343,000 women readers

Daily Express 5,268,000 women readers

> **Daily Mail** 2,801,000 women readers

Daily Sketch 1,847,000

women readers

s your hair a bewitching, shining beauty you have never known before

ng eyes. Now miraculous to your hair - every single A touch of SHINING LOOK, ake on a new enchanting d exciting product from aris. It is a delicate dis-

solving cream, light as gossamer, that gives a silken brilliance to every single hair, without oiliness, and without any clogging of one strand to another. And featherlight SHINING LOOK conditions hair too, making it soft and pliant-easier to manage, easier to set. If you want hair that shines beautifully, irresistibly, buy a tube of SHINING LOOK today. Brush a little in-look in your mirror-and you'll revel in the difference it's made. From Chemists, Stores and Hairdressers 3/- per tube.

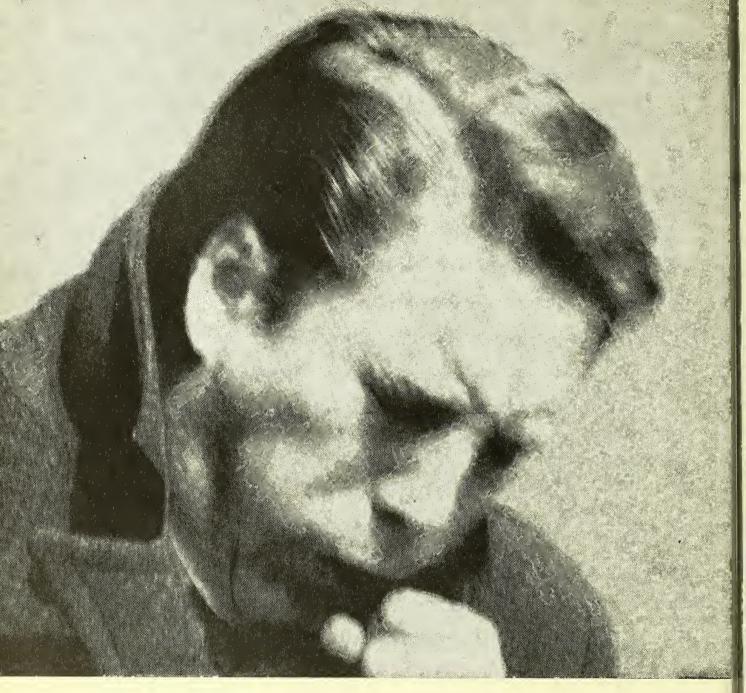
hining loop

for shining, radiant hair

A creation of L'OREAL · PARIS. The World's greatest makers of hair beauty products.



Antussin stops that cough-scientifically



Within the next few weeks Antussin will be launched by the biggest advertising campaign ever used for a product of this kind. Frequent I minute commercials, on all TV channels will tell your customers how Antussin calms the nerves that make you cough. Antussin is available only from chemists so order your winter stocks now and make sure you have it on display before the campaign starts. Packed in display boxes of I dozen 2 oz. and 4 oz. bottles, Antussin can be obtained from your usual wholesaler, or direct from your nearest Tobal depot.

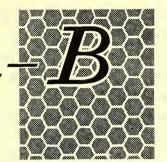
ROYAL JELLY Again in the news!

NOW . . . a vital new formula containing

EIGHT ESSENTIAL VITAMINS and ROYAL JELLY in Capsules

rezesta

An important natural diet supplement stimulating the metabolism and re-invigorating the living organism. Royal Jelly is widely used for its contribution to stamina and well-being. In all parts of the world people have taken to it as a revitaliser, as a tonic and rejuvenator. It is recommended for general fatigue, for the convalescent, the "run-down" and the dispirited. In countless cases it has restored vigour, energy, well-being, optimism and health.



Agents and Distributors wanted in all countries

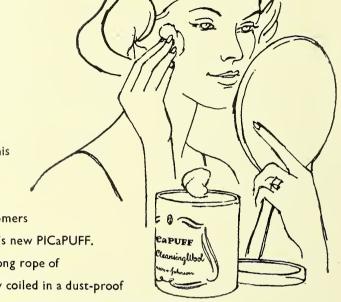
Sole Manufacturers:-

SHOP THE MODERN WAY! Send immediately for fully illustrated leaflet of Martin Display Cases and prices.

TOM E. HOBSON LIMITED, LONDON, S.W.19
46 CROOKED BILLET, LONDON, S.W.19. WIMbledon 0402

Its crustal clear. The more they SEE, the more they BUY The beauty of a Martin glass £12 display case is that it shows COMPLETE merchandise of every scription to your customers' best advantage. Each individual case, with its gleaming chrome fittings, is tested and guaranteed before Choose a vertical or sloping showcase and build better business from the moment it is installed. Unit af two vertical cases and ane slaping case. Price per set £12.0.0. (Vertical showcase 24" high, 18" wide, 12" deep. Price £4.5.0. Sloping shawcase 14" high, 36" wide, 12" deep. Price £4.5.0. Yau save 15]- on 3 cases.) Vertical and slaping cases packed separately. All prices carriage paid in Gt. Britain. All packages FREE of charge and NON-returnable. Special orders to customers' own requirements cerried MARTIN'S GLASS DISPLAY CASES out quickly. Quantity orders on application. LOOK INTO IT TODAY - EQUIP YOUR

Post to: MARTIN DISPLAY (Dept. CD), 52 Market St., Watford, Herts. Tel: Watferd 9287



slip-on cap for complete cleanliness,

There are 20,373,000 women in this country over the age of fifteen.

Virtually all of them use make-up:

virtually all are potential customers

for Johnson & Johnson's new PICaPUFF.

PICaPUFF is cleansing wool in a long rope of

soft rayon fibre conveniently coiled in a dust-proof

and damp-proof transparent container. This has a

ANOTHER
CUSTOMER FOR
Johnsons
PICaPUFF

and an inner opening which allows a puff of wool

of just the right size to be pulled out at will.

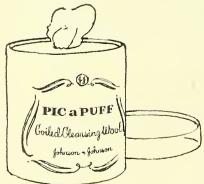
PICaPUFF is perfect for applying or removing make-up,
lotions, powder, antiseptics and ointments; and for all sorts

of dressing table, bathroom and nursery needs.

It is supplied in the most popular pastel shades of
pink, yellow and green, and pure white for nursery use.

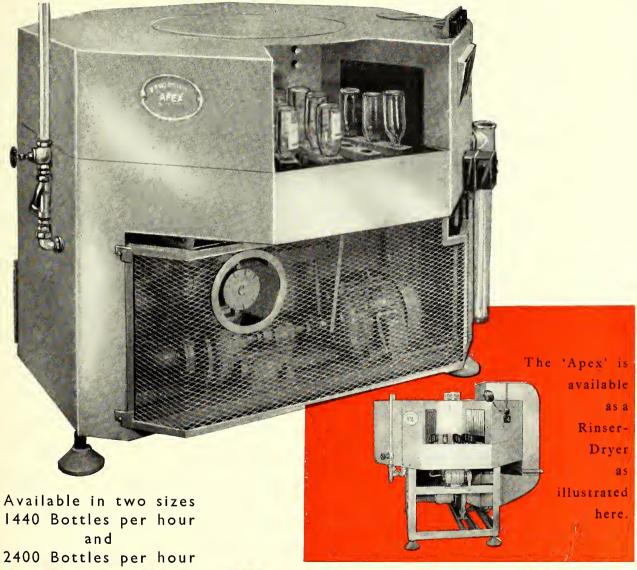
Johnson & Johnson products are made for the
care of the whole family. Many of the families in your
neighbourhood are your friends already:

make sure of their continued custom —
and make friends with new customers —
by stocking the full Johnson & Johnson range.



Johnson Johnson

great little machine at a remarkably low price Sufferior cleaning treatment in a surprisingly small floor area very kind of bottle, with labels or without ceptionally low running costs



BOTTLEWASHER FOR FULL DETAILS WRITE TO

ITED, St. Marks Rd., Sunderland, England

Telegrams and Cables "Powley" Sunderland

Telephone 4846/7



OYER A CENTURY OF SERVICE

'Peelers', as the first metropolitan policemen were called, were still something of a curiosity at the time of this company's formation. Today, however, a policeman's uniform is a familiar background to the London scene. So, too, in those 125 years of development has the name of May & Baker Ltd. become familiar to the chemical world. Their long experience in chemical production, combined with expanding facilities and laboratory research, enables them to offer a comprehensive range of reliable pharmaceutical chemicals.

The first metropolitan police force was instituted in 1829 by Sir Robert Peel



BARBITURATES

are subjected to strict analytical control and can be used with confidence. Included in the range are:

ALLYL ISO BUTYL BARBITURIC ACID . AMYLOBARBITONE B.P.

AMYLOBARBITONE SODIUM B.P.C. BARBITONE B.P.C. BARBITONE SODIUM B.P.

BUTOBARBITONE B.P. · BUTOBARBITONE SODIUM · CYCLOBARBITONE B.P.

CYCLOBARBITONE CALCIUM . HEXOBARBITONE B.P.C. . HEXOBARBITONE SODIUM B.P.C.

METHYLPHENOBARBITONE B.P.C. PHENOBARBITONE B.P.

PHENOBARBITONE SODIUM B.P. · QUINALBARBITONE

QUINALBARBITONE SODIUM B.P.



M&B

for fine pharmaceuticals



MANUFACTURED BY

MAY & BAKER LTD

DAGENHAM

Tel: DOMinion 3060 · Exts: 317 and 318

PHA1393/120

DB

80% profit on outlay



throat lozenges

CIBA

Every unit of a dozen tubes is packed in an attractive display outer, complete with price tickets and crowners, and an attractive showcard is available for your window and counter.

Cost to chemists 1.6/8 per doz.

Retailing at 30/0 per doz.

NET PROFIT 13/4 per doz.

CIBA LABORATORIES

LIMITED · HORSHAM

SUSSE

Manufacturing and Packaging for PHARMACY

The finest service of its kind in the world

The COX organisation offers a complete manufacturing and packaging service for the retailer, wholesaler and those marketing proprietary brands.

It is a home and overseas service that provides the finest products well packed and ethically presented.

Here are a few features designed by our Art and Packaging Departments:

Eleven attractive styles for retail pharmacists' "own name" preparations.

Special designs for proprietaries and private formularies.

A breakage free, bulk tablet delivery.

Good visual designs for T.V.

High grade carton board and label paper and printing.

Strip packaging—extensive range.

Sachets for powdered and granular products.



لاتقتم أية شركة أخزى مش هذه الخدمة التح تستندالى خيرة ١٢٠عاماً في وليمة احتياجات الصّيَاولة . فلوتفضّلتم بموّافا نشابما يلزمكم، سَيَسَرَيْا أن مُشرَرَح لحضرًا نكم مَاسنستعؤد به هذه الخدمة عليكم مون فوائد م



ใน้มีประสิษฐกรแห่งใดที่เสนอบริการมากเท่านี้ ด้วยความฮาบาดูบาถึงร้อยปีสินมีที่เรียนรู้ความต้องการของผู้ขายบา เราจึงทราบว่าท้านต่องการอะไร และเราจะอซิบายให้พราบว่าบริ การนี้คือย่างไร ทั้งนี้โดยเพพาะสาพรับค่าบุ



Geen andere fabrikant offert zulk een uitgebreide service, welke steunt op 120 jaren ondervinding in het bestuderen van farmaceutische benodigdheden Laat ons weten wat uw vereisten zijn en wij leggen u uit hoe voordelig deze service voor U kan zijn.



Aucun autre fabricant n'offre un service aussi étendu. Ce service est secondé par 120 ans d'expérience consacrés à l'étude des nécessités des pharmaciens. Faites-nous connaître vos besoins et nous vous expliquerons alors le bénéfice dont VOUS pouvez dériver de ce service.



No other manufacturer offers so comprehensive a service. It is backed by 120 years' experience in studying the needs of pharmacists. Tell us of your requirements and we will explain how beneficial this service can be to YOU.

ARTHUR H. COX & CO. LTD BRIGHTON - ENGLAND

THE FOREMOST TABLET HOUSE

Here's a product promise with

Bronchipax

Sell-out in
Newcastle for
new scientific
one-dose
bronchial remedy

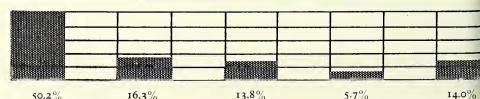
N — A product of Nicholas Research

Initially launched a few months ago in Newcastle-upon-Tyne, new formula 'Bronchipax' proved an overwhelming overnight success. Local advertising and shop displays brought an immediate response from chest sufferers which has grown steadily ever since. Read what Newcastle chemists say about 'Bronchipax':

- "Could have sold three dozen packs on the first day. Completely sold out. Staggering."
- "One of the best bronchial remedies."
- "The first half dozen went very well and had to be repeated quickly."
- "Most successful."
- "A number of repeat orders through personal recommendation."

HERE ARE THE FIGURES TO BACK UP THE CLAIMS

This is how the Newcastle market was shared only 3 months after the introduction of 'Bronchipax'.



BRONCHIPAX' SECOND BRAND

THIRD BRAND

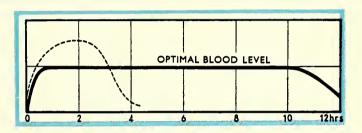
FOURTH BRAND

OTHERS

hat backs up its PROOF

Here's the reason for this phenomenal success

A new medical discovery—Ephedrine Resinate—lies behind the lasting effect of 'Bronchipax' which eliminates the frequent dosage necessary with most other bronchial remedies. Ephedrine Resinate gives fast-acting levelaction relief. One dose maintains a reserve in the system to keep bronchial tubes dilated for up to 12 hours easy breathing, giving invaluable extended relief which with Ephedrine alone is impractical.



New scientific one-dose 'Bronchipax' brings up to 12-hour relief

This graph shows you how much longer 'Bronchipax' action lasts. See how the older remedy (dotted line) quickly loses its effectiveness. But 'Bronchipax' (heavy line) acts quickly, acts surely, acts without interruption.

Here's the promotion to make BRONCHIPAX' a NATIONAL best-seller

'Bronchipax' will now be nationally distributed throughout the British Isles, supported by a full-scale advertising campaign which opens in October with dramatic big-space announcements in:

DAILY EXPRESS DAILY MIRROR DAILY HERALD NEWS OF THE WORLD EMPIRE NEWS THE PEOPLE

TV on all Stations, too!

Commercial TV announcements in *all* areas will bring the good news of 'Bronchipax' right into the homes of millions of 'chesty' viewers—will show them how to get a better night's rest, every night, by taking one-dose 'Bronchipax' regularly.

A total of £60,000 in the first 6 months' launching period is being spent—over £46,000 more than was spent by the biggest advertiser in this field for the whole of last year.

Here's how you can profit from stocking up with Bronchipax'

| | AT BEST TERMS | AT TRADE PRICE | |
|--------------|---------------|----------------|--|
| You Spend | £5 • 13 • 10 | £6 • 10 • 0 | |
| You Get Back | £9 · 6 · 0 | £9 • 6 • 0 | |
| You Profit | £3 • 12 • 2 | £2 • 16 • 0 | |

Build up a stock of BRONCHIPAX now!
Once the news breaks about this long-needed extended-action bronchial remedy, you'll need plenty to satisfy the big demand and regular repeat orders that will come from all chest sufferers among your customers,

There is a model to suit your ecial needs

Pioneers of the WORLD'S LOWEST PRICED ADDING/LISTING MACHINE

SWEEPING THE COUNTRY
WITH THE MOST
FANTASTIC SALES
SUCCESS THE
WORLD HAS
KNOWN

BE ON
GOOD TERMS
WITH ADWEL

PRICES FROM ONLY



(No Purchase Tax)



your opportunity to save £100!

For the one man business and general office routine, the amazing Adwel will cut figuring time to a fraction. Save £100 or more, buy an Adwel.

£100 in your pocket

The lowest priced adding machine in the world—less than half the price of other adding machines, yet the Adwel is renowned for its quality, speed and efficiency—and it can be yours for as little as £27.

Available at these prices in G.B. only.

Enquire through your supplier or :—

SEND THIS COUPON, NOW!

ADWEL ADDING MACHINES LTD.

Dept. CD. 20 Pall Mall, London, S.W. Tel: TRA 2203,4 City Showrooms: 41 Furnival Street, E.C.4 Tel: CHA 4112/3

Please send immediately full details of all Adwel Adding/Listing Machines

Name

Address

ADWEL ADDING MACHINES LTD., 20 PALL MALL, LONDON, S.W.I

Bonus Offer 25% PROFIT+ 7½% EXTRA FOR YOU!

STILL TIME TO TAKE ADVANTAGE OF Thermegas offer

Make 22/8 profit
on single blankets
Make 36/9 profit
on double blankets
THIS AMAZING OFFER
OPEN UNTIL 15th NOV. 1959

- Thermega recently offered you a rebate of 7½% on all orders. Be sure to take advantage of it, by ordering through your wholesaler or direct.
- The **Thermega** "County" is the newest electric blanket in this famous range.
- Thermega craftsmanship and quality, based on 30 years' experience, have no equal.
- Thermega Advertising will push your sales through advertisements in over 100 million copies of the great national newspapers.

Thermega'

• ELECTRIC BLANKETS AND PADS

THERMEGA LTD., 37 THURLOE STREET, LONDON S.W.1. Tel: KNIGHTSBRIDGE 8532

CFH/TH9/4

SPECIAL ANNOUNCEMENT

HERO AEROSOLS AND AND FASSETT & JOHNSON

As from 5th October, 1959, Fassett & Johnson Ltd. of 86 Clerkenwell Road, London, E.C.1 (Tel. CLErkenwell 2336) have been appointed sole distributors in the Pharmaceutical field of the HERO range of aerosol products. Please send your orders and enquiries to this address. HERO retail prices and generous trade terms will remain unaltered.

INTENSIVE NATIONAL ADVERTISING WILL PROMOTE INCREASED SALES SO MAKE SURE YOU'RE STOCKING HERO NOW!

†HERO COLD RELIEF HERO SPOT REMOVER

*HERO AIR FRESHENER HERO MOTHPROOFER

*HERO INSECTICIDE
HERO FIRE EXTINGUISHER

REDUCTIONS
IN PRICE -

Now retailing at

6/6

* Now retailing at

3/9

PROPRIETARY PRESSURE PACKAGES LTD. BIRMINGHAM

Soreness here . . . ?

remedy

here..



PRE-WINTER BONUS OFFER

October 1st to November 30th.

12 tubes for the price of 10.

Minimum order—12 tubes.

This special display outer
containing one dozen tubes of
'Zynocin' is offered to
you at Bonus Terms
stated above giving a
profit of 20s. 0d. for an
initial outlay of 25s. 0d.

A compelling new
counter showcard is
available on request.

PROFIT—1s. 8d. per tube

Zynocin⁷

the antibiotic lozenge with the NICEST flavour

- * The only lozenge containing xanthocillin the new wide-spectrum antibiotic intended solely for topical use.
- * Delightfully fruit flavoured—totally free from traditional 'medicinal' taste.
- * Contains benzocaine too—for prompt and prolonged relief of pain and discomfort.

TRADE PRICE: 2s. 6d. per tube of 12 lozenges.

RETAIL PRICE: 3s. 9d.

ORDER NOW FROM YOUR USUAL WHOLESALER

DC(B)L

THE DISTILLERS COMPANY (Biochemicals) LIMITED Broadway House, The Broadway, Wimbledon, London, S.W.19

Telephone: LIBerty 6600

Owners of the trade mark 'Zynocin'

ANOTHER GREAT ROSE-KIA-ORA BONUS PLAN!

Here's great news for all those who made wonderful profits out of the amazing Spring Bonus Offer by Rose Kia-Ora. It is being repeated for the Autumn!!! Make the most of this wonderful opportunity and round off the year with an all-time record in sales and profits.

Wonderful Profit Opportunity! **AUTUMN BONUS**

We will give one dozen bottles of Suncrush Orange free (normal trade price 31/-) with every sixcase order placed before the 7th November, 1959, for immediate delivery. Each order for six cases (and each multiple of six) must include at least three cases of Suncrush. The balance may be made up with any of the Suncrush or Kia-Ora varieties listed below.

SUNCRUSH Orange, Lemon

KIA-ORA

Orange Squash, Lemon Squash

Grapefruit

Grapefruit Squash

Lemon Barley

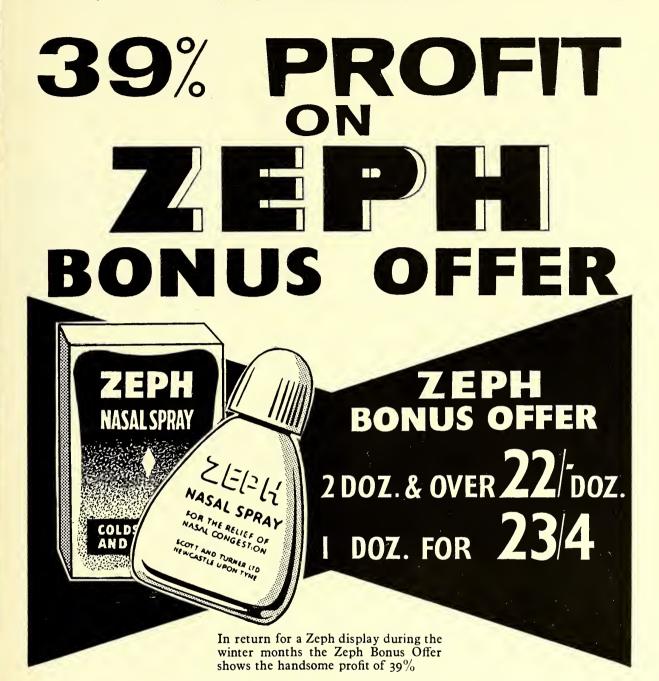
Children's Orange Squash (2 dozen to the case)

EXAMPLE: Six dozen Suncrush and Kia-Ora (at 31/- less 1/3d) 29/9d per dozen. Seven dozen charged as six dozen £8.18.6d. Cost for one dozen £1.5.6d, i.e. 2/1½d per bottle!

OFFER CLOSES 7th NOVEMBER, 1959

(IN SCOTLAND THIS BONUS OFFER CLOSES ON 31st OCT. 1959)

ROSE · KIA - ORA SALES COMPANY · ST. ALBANS · HERTFORDSHIRE



To tie up with displays, advertising campaigns both on T.V. and in the press are planned to cover the whole winter period October to April and include:

RADIO TIMES · T.V. WEEKLY · THE VIEWER

This advertising will give solid support to your display, enabling you to take full advantage of the 39% profit on the Zeph Bonus Offer.

Enquiries and orders to:— SCOTT & TURNER LTD., ANDREWS HOUSE, NEWCASTLE UPON TYNE, 1.





LOOK AT THESE
FEATURES, THEN
LOOK AT THE PRICE

- 4 objectives on rotating turret
- 100x, 200x, 300x, 400x
- Magnifications guaranteed in accordance with N.P.L. report F. 1626 of 18 · 8 · 59
 - Reversible automatic light and mirror assembly
 - 2 U.12 cells in base
 - Fitted wooden case and 3 slides

RETAIL PRICE COMPLETE

£6.12.6

with batteries, bulb

A new "Stein" Microscope with the features of a professionally styled instrument plus the most ingenious illuminating method ever. Turn the mirror reflector over, and the fitted bulb lights automatically to spot-light the specimen being studied. With two standard batteries within the base, fitted wooden case and 3 plain slides this sales-compelling and very efficient microscope is going to make first-class business the year round.

Order now for early delivery.

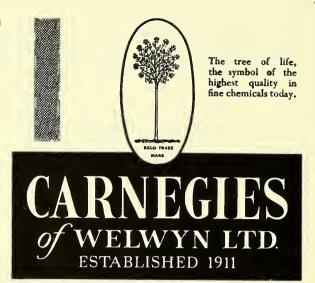
- Full trade discounts
- Enquiries from wholesale houses invited
- Leaflets and display cards available

PURSERS LONDON

(HOLBORN) LTD

12, FULWOOD PLACE, LONDON, W.C.I

Telephone: HOLborn 5268



Manufacturers and Suppliers of

ADRENALINE **ADRENOCHROME** MONOSEMICARBAZONE ALPHANAPHTHYL ACETIC ACID **AMINOPHYLLINE BISMUTH SALTS** BRUCINE AND SALTS CAFFEINE AND SALTS CHRYSAROBIN EPHEDRINE AND SALTS HYDANTOIN DERIVATIVES IODIDES ISOPRENALINE SALTS METHOIN NORADRENALINE AND SALTS P.A.S. SODIUM PIPERAZINE AND SALTS RESERPINE SANTONIN STRYCHNINE AND SALTS THEOBROMINE AND SALTS THIOMERSALATE **QUININE AND SALTS** CINCHONA FEBRIFUGE TOTAQUINA

CARNEGIES OF WELWYN LTD. Welwyn Garden City, Hertfordshire, England

Phone: WELWYN GARDEN 5001 (10 lines)
Cables: CARNEGIES, WELWYNGARDENCITY

Telex: LONDON 28676

RASTINON...

now provides the safest

oral treatment for I¹/₄ million diabetics

throughout the world

A price reduction in the United Kingdom, effective from 12th October, cuts the cost of treatment by over 10 per cent

NEW TRADE PRICE

Bottles of 100 tablets **23/4** (formerly 26/3d)
Bottles of 500 tablets **110/-** (formerly 123/9d)

Rastinon is

EFFECTIVE

More than $\mathbf{1}_{4}^{1}$ million diabetics all over the world owe their well-being to Rastinon (tolbutamide). Its clinical value is substantiated by over twelve hundred published articles.

SAFE

Rastinon has gained world-wide acceptance in the treatment of suitable diabetics because of its outstanding safety. It has been more thoroughly investigated than any other oral anti-diabetic agent, yet no serious side-effects have ever been observed. *The incidence of side-effects is even less than with aspirin.* There is virtually no danger of hypoglycaemia as a result of Rastinon therapy.

SIMPLE

In many cases, one tablet by mouth once or twice a day is all that is necessary for maintenance.

HOECHST

GET the EXTRA SALES that PAYput Scentinel **PRODUCTS** ON DISPLAY



DISPLAY STAND FREE!

SEND IN THE COUPON AND GET FULL DETAILS OF OUR FREE OFFER. REPRESENTATIVE WILL CALL AND SET UP THE DISPLAY IN YOUR STORE.

NEW **HYGIENE LTD., 266-268**

Telephone: NORth 5041-2-3

Scentinel SWISH

The automatic toilet bowl cleanser. It cleans, deodorises and disinfects. Held by a rubber suction hook. It fits in a FLASH, cleans with the FLUSH. 1/6 complete, Refills, 9d.

Scentinel QUIFF

The fragrant air-freshener and germ killer. Available in Aerosol form at 4/6, or in refillable puffer bottle, 3/6 and 2/3. Refills, 1/6 and 1/-.

Scentinel MIKE

The original air-freshener in plastic holder with suction grip. Complete, 2/9. Refills, 1/3 or 9d.

Scentinel WHAM!

The fragrant fly spray and mothproofer, in poly puffer squeeze bottle at 3/6. Refills, 1/6. Or in Aerosol form 4/6.

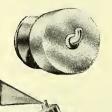
Scentinel BOBBY

An attractive new package, 23 sq. with handy tab for hanging in wardrobes or cupboards. 1/- complete.

Scentinel MINOR

An unbreakable polythene holder with suction grip and chemical block. 1/6 complete. The fragrant refill may be used for the Mike or any small container. 9d.















| PLEASE | SEND | DETAILS | OF | YOUR | DISPLAY |
|---------|--------|---------|----|------|---------|
| STAND C | OFFER. | | | | |

NAME

ADDRESS

HOLLOWAY ROAD, LONDON, N.7

Telegrams: AIROGENA-HOLWAY, CODE A B C

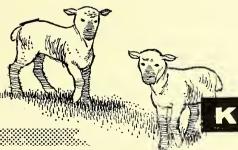
Calcium Gluconate



Calcium gluconate is widely accepted as the most satisfactory means of administering calcium. Prescribed medically for numerous ailments, including debility, rickets, dental caries, neurasthenia and in pregnancy.

and in veterinary practice

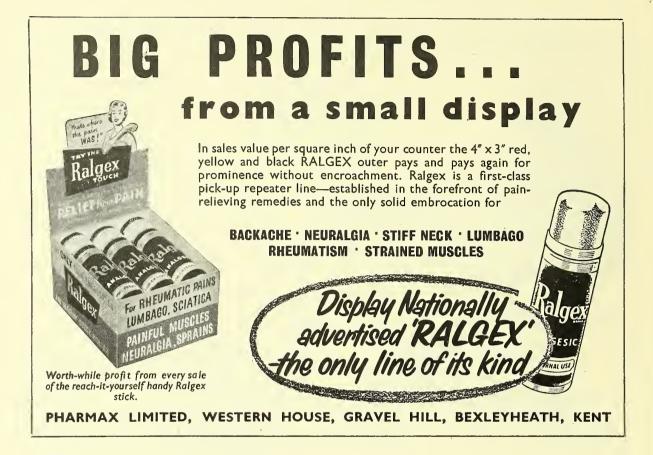
Calcium gluconate is also used in the treatment of conditions such as milk fever, eclampsia and lambing sickness. Please write for our new leaflet "Calcium Gluconate in Veterinary Practice" for full details.



Taken by the mouth in tablet or powder form calcium gluconate is well absorbed and practically tasteless. By injection it produces the minimum of reaction. For full details please write for our booklet.

EMBALL, BISHOP

Chemicals for Industry



Elastic Bandaging without Skin Irritation



PoroPlast considerably reduces the risk of skin irritation which often associates with the use of ordinary elastic adhesive bandages. It contains no rubber and none of the irritating natural resins or solvents usually embodied in adhesive plaster.

Consequently PoroPlast can remain in situ for long periods without causing irritation, and it has been well tolerated even on very sensitive skins.

PoroPlast is porous and has the same characteristics of elasticity, stretch and compression as ordinary elastic adhesive bandages. Its price is the same. It can be prescribed on N.H.S. Rolls 3" and $2\frac{1}{2}$ " wide (5-6 yards stretched), in tins.

PoroPlast

PoroPlast is now being advertised regularly to the Medical Profession

THE SCHOLL MFG. CO. LTD., 182-204, ST. JOHN STREET, LONDON, E.C.I



E. ILLINGWORTH & CO. (Bradford) Ltd.

COTTON WOOLS

ILLMOND—COTTON WOOL DISPENSER PACK

Package has tuck-in ends and can be re-sealed. Hygiene ensured. Elegant design of pack makes it perfect for a lady's dressing table. Only as much as is needed is pulled out at a time.

B.P.C. quality cotton wools. Hospital quality cotton wool (Drug Tariff). Steriliscd and Unsteriliscd in all weights, for Home and Export.

Quantities labelled with your own labels from ½ oz. to 16 oz. standard packets.

Bottle neck wool, filter pads, gauze and cotton tissue B,P.C. Quality, Respirator refills,

PACKING MATERIALS

NEEDLELOOM FELTS

for thermal, sound and vibration insulation and protection.

COTTON WOOLS

Bleached and Unbleached Rolls from 2 in. to 40 in. wide, weights 3 oz. per sq. yd. upwards.

E. ILLINGWORTH & CO. (Bradford) Ltd.
SHELF MILLS, SHELF, NR. HALIFAX, YORKS.

Tel: BRADFORD 76261/5. Grams: "ILLMOND BRADFORD"



THE CHEMIST AND DRUGGIST

ESTABLISHED 1859

The weekly newspaper for pharmacy and all sections of the drug, pharmaceutical and fine chemical, cosmetic, and allied industries

Official organ of the Pharmaceutical Society of Ireland and the Pharmaceutical Society of Northern Ireland

Volume 172

Branch Events

October 10, 1959

No. 4156

300

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PUBLISHED BY

MORGAN BROTHERS (PUBLISHERS), LTD., at 28 Essex Street, Strand, London, W.C.2

Telephone: Central 6565

Telegrams: Chemicus, Estrand, London

WOLVERHAMPTON: 89 Woodland Avenue, Tettenhall Wood. GLASGOW: 160 Nether Auldhouse Road, S.3. *Phone: Langside* 2679, LEEDS, 16: 32 Wynford Rise, West Park. *Phone: Leeds* 67 8438.

ANNUAL SUBSCRIPTION

which includes The Chemist and Druggist Diary and Year Book, £2 10s. Single copies one shilling each.

WRIGHT'S COAL TAR INHALER & VAPORIZER Ample Supplies are available NOW!



Complies with the specifications set out in part IV of the N.H.S. Drug Tariff.

Complete with full size bottle of Vaporizing Liquid and six night lights. Retail . . . 8/-Vaporizing Liquid Refills. Retail . . 1/9 & 5/6 Spare absorbent blocks. Retail . . 1/- each

The Vaporizing Liquid cannot spill if the apparatus is accidentally knocked over while in use.



Obtainable from all Wholesalers, or direct from

WRIGHT LAYMAN & UMNEY LTD., SOUTHWARK STREET, LONDON, S.E.I

MORE IDEAS BEGIN WITH BORON

BORON IN THE CHEMICAL INDUSTRY

The versatility of boron compounds provides ever increasing scope for research from which new products and applications are constantly being developed. Pure elemental boron, metallic borides, boron phosphate and a wide range of new organic boron compounds are a few examples of the results of recent research.



But now the glass goes into the boat

The well-known toughness of glasses such as ovenware, laboratory glasses and other specialised types, is largely due to the presence of boric oxide. This product is also an important constituent of the tough, borosilicate fibres which are now creating a new and completely different future for glass. These strong glass fibres are moulded with plastics into sturdy, lightweight structures for modern boat-building, woven into textiles for electrical insulation or made into 'blankets' to insulate a house. This contribution to a rapidly-expanding industry is yet another use for boron and boron compounds. In nuclear research, in rocket fuels, in new synthetic materials, as well as in established fields of industry and pharmacy, their varied properties give rise to many new possibilities for progress.

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CHEMIST AND DRUGGIST

Volume 172

OCTOBER 10, 1959

No. 4156

An Efficiency Drive

INSPECTION OF EXECUTIVE COUNCILS

EXECUTIVE Councils have been notified that the Minister of Health proposes to appoint a small team of staff inspectors to visit Executive Councils "to test the effectiveness with which the Council is discharging

its responsibilities for staff control.' Also the Minister is cancelling the special measures for securing economy in manpower. Except for certain posts Councils will be responsible for deciding the numbers and grades of staff in their employment, Executive Councils are asked periodically to review their establishments and to nominate an officer to be responsible for keeping under review the numbers and gradings of their establishments. Councils may authorise upgradings within the clerical and typing and machine operating grades when satisfied that they are justified and may create additional posts in the clerical, higher clerical and typing and machine operating grades, but will require to obtain the prior approval of the Minister for the creation of additional posts in the executive officer and designated grades. The new team of staff inspectors are to carry out visits to Executive Councils, normally with their prior consent, and prepare reports covering the sections inspected, the nature of the duties performed, and any apparent excesses or shortages of staff. Visits may occasionally be made by a staff inspector of the Ministry to deal with special problems of an establishment nature other than staff control. When necessary reports will include recommendations as to changes in numbers and gradings of posts. "It is not the intention that there should be either a regular or exhaustive programme of inspections," state the Ministry of

Arsenic Spray

Health.

A COMPANY RECALLS STOCKS

ALL distributor stocks of Foliatox arsenical potato crop spray are being withdrawn by Fisons Pest Control, Ltd., and production of the spray is being stopped. The spray, leaking into a farm's water supply, was a contributory cause to the death of the wife of a Worcestershire farmer (see p. 290). Messrs. Fisons Pest Control point out, however, that their decision to withdraw Foliatox is not directly a result of the jury's rider to the verdict, but is part of the company's planned policy to produce a range of pest control products harmless to humans, farm stock and wild life. The company's official

statement is as follows: "For some time Fisons Pest Control, Ltd., have been working on a programme that has as its object the marketing of a range of agricultural chemicals all of which are safe to humans, animals, and game. Now, as a further development of that policy, the company announce that they will no longer distribute or produce any arsenical weed killer or defoliant. These have been used for many years for killing the haulm and weeds before lifting potato crops. Every precaution has always been taken including the deliberate addition of a warning colour and taste to the material and the printing of comprehensive safety instructions on containers, conforming fully to the statutory requirements for the protection of farm workers and the public. Despite that, however, arsenites continue to present a real risk to humans, farm stock and wild life. It is realised that this decision may cause

some inconvenience to potato growers, but in order to minimise those difficulties every effort is being made to increase Fison's Pest Control contract acid-spraying capacity for the burning off of potato haulm. Arrangements are in hand for the withdrawal of distributor stocks and it is hoped to complete that operation by November 1."

Examination Results

PASSES IN THE INTERMEDIATE

THE following candidates satisfied the examiners in the Intermediate examination held by the Pharmaceutical Society in England and Wales in September:—

ADAM, E., Rustenberg; ANGELL, A. J., Bournemouth; BAKER, D. J., Dry Drayton; DALE, G. E., Liverpool; DUBOIS, E. J. H., HORNSEY; EVANS, J. G., COTWEN; FARMER, ANNE, Leicester; FLETCHER, A. K., Preston; GRANT, D. J., YOFK; HARRIS, JOY E., Kettering; HEATHCOTE, C. J., Bromley; HESKELL, R., Worthing; HODGKINSON, Mildred A., Gravesend; HORTON, B. F., Tamworth; HOUGHTON, S., Ormskirk; KENNEDY, W., Blackpool; Leggeft, J. E., Southampton; Le Vesconte, D. H., St. John, Jersey; LOUGHRAN, V., Battle; MELIA, D., ROSSENDAIE; MILLER, A., Stretford; OSMOND, B. F., Bletchley; OWEN, R., Caernarvon; PHILLIPS, I., Cardiff; RUSSELL, J. S., Bristol; SIMMONS, D. L.,



SIXTY YEARS IN PHARMACY: To commemorate his completion of sixty years in pharmacy Mr. H. R. Nightingale on October 5 presented Enfield Chemists' Association with a presidential badge of office, Mr. Nightingale is seen here placing the badge on Mr. T. F. Preston (president) watched by Mr. J. Soulsby (secretary, at left) and Mr. J. F. McNeal (a member of the Council of the Pharmaceutical Society). Mr. Nightingale said that he had wanted the gift to be anonymous, "but Mr. Soulsby would not hear of it."

Brighton; SLATER, J. S., Matlock; STAINTON, B. N., Barnetby; VARNISH, D. L., Coventry; VEASEY, Ann E., Westminster; WILLIAMS, D. G., Llandrillo; YEANDLE, Kathleen G., Minehead; YOUNGMAN, R. A., Norwich.

Gonorrhoea Danger

PENICILLIN MISUSE CONDEMNED

FIGURES before the World Health Organisation expert committee on venereal infections and treponematoses, show that in twenty-two countries the number of annually reported cases of gonorrhœa since 1950 has gone down in only four, has remained the same in two, and has risen in sixteen countries. The figures are incomplete since the number of unreported cases is probably three or four times larger than the reported ones, and self-treatment with penicillin is frequent.

The committee is against: The casual use of penicillin in tooth-paste and lozenges; the sale of penicillin without a prescription; and the routine penicillin shot for the seaman who may have exposed himself to venereal disease. Penicillin is still of value in treating gonorrhæa and syphillis and in mass campaigns against endemic tre-ponematoses, which include yaws, pinta and bejel as well as endemic syphillis. Success in syphillis control has been obtained and a reduction in the number of new cases has occurred; striking results are obtained with penicillin against endemic infections. Why? The W.H.O. experts give a number of reasons including the following for the failure with gonorrhea: Belief in the efficacy of the penicillin shot combined with widespread indifference in professignal circles and the public; diagnostic difficulties; the large number of cases and general lack of immunity; the larger doses of penicillin are needed against resistant strains of gonococci. The committee recommends that the World Health Organisation should set up a gonococcus centre to collaborate with national laboratories.

Portsmouth College

APPOINTMENTS AND A DEGREE

PORTSMOUTH College of Technology, department of pharmacy and physiology, announce that Mr. H. E. Glynn, B.Sc., Ll.B., F.R.I.C., F.P.S. (formerly with Glaxo Laboratories, Ltd., and Whiffen & Sons, Ltd.) has been appointed senior lecturer in pharmaceutics and Mr. B. H. Livett, M.Sc. (until recently a member of the staff of Malaya University) has been appointed a lecturer in physiology and pharma-cology. Mr. P. J. Watson, B.Sc.Hons. (Zool.), B.Sc.Hons.(Physiol.) (senior lecturer in physiology) has been awarded the degree of Master of Science at Edinburgh University for a thesis on "The Mode of Action of Local Anæsthetics." Annual prize-giving of the department is to take place in the college hall at 5 p.m. on October 28. The occasion is to be marked by the formal presentation to the department of the collection of books and the book fund raised by Mr. J. C. Bloomfield (a member of the Council of the Pharmaceutical Society) to mark

the fiftieth anniversary of the formation of the Portsmouth Chemists' Association.

Pharmaceutical Exports

A.B.P.I. PRESIDENT'S FORECAST

MR. E. D. Carey (president, Association of British Pharmaceutical Industry), told the Association's conference



Signorina Valeria Valier (left); Mr. E. D. Carey, president of the Association; Mrs. Carey; and Dr. Valerio Valier.

at Eastbourne recently that United Kingdom pharmaceutical exports might for the first time reach an annual total of £40 millions in 1959. The principal guest of the Association was Dr. Valerio Valier, representing Pharmindustria, an association of the Italian pharmaceutical industry.

Gifts of £90,500

ROYAL COLLEGE OF SURGEONS' FUND

THE Royal College of Surgeons has received another £90,466 towards its appeal. Among the donations were the following:—the Beecham Group, Ltd., £7,000; Chesebrough-Pond's, Ltd., £1,200; A. Wander, Ltd., £1,141; Coty (England), Ltd., £570; Timothy Whites & Taylors, Ltd., £500; the American Dental Society of London, £200; Colgate-Palmolive, Ltd., £105. The Royal College announced in March that they urgently needed £3 millions to spend on vital medical research, teaching graduates from Britain and the Commonwealth the art of surgery, and the rebuilding of their premises. which were severely damaged during the war. To date they now have £1,786.655.

Stramonium in North

THE Ministry of Agriculture has issued a warning to farmers that Datura Stramonium, formerly unknown in the north of England, has been discovered in the area between the North Riding of Yorkshire and Cumberland. Farmers are asked to burn plants and the Ministry warns that the foliage and seeds are dangerous to cattle and small children. It is hoped that plants will be destroyed before seeds are dispersed and liable to germinate.

Leverhulme Trust

THE second report of the Leverhulme Trust contains an analysis of grants given by the Trust during the period 1932-55. £854,358 was distributed of which £115,300 was for medical re-

search. Part of the income of the trust—now one-quarter—has to be applied to charities connected with commercial travellers, grocers, or chemists. Out of £58,600 allocated for that purpose £500 was given to the Chemists' Benevolent Fund, Northern Ireland. The Glyn-Jones Memorial Fund received £3,000. The Pharmaceutical Societies of Great Britain and Ireland received £2,800 and £500 respectively.

IRISH NEWS

THE REPUBLIC

Irish Pharmacy Week

TO BE AN ANNUAL EVENT?

MR. D. W. P. Boyd (chairman of the organising committee), announcing in Dublin on October 2 the detailed programme of the first Irish Pharmacy Week, to be held in Dublin, October 12–16, said "We hope to make this an annual event and hold it in Cork, Galway, Waterford and other venues from year to year." The Pharmaceutical Society of Ireland expects at least 300 people to attend the educational, cultural, social and sporting events planned for the week. Among those intending to be present is Mr. Hugh Campbell (president, Pharmaceutical Society of Northern Ireland).

The week is to be opened at the College of Pharmacy, Shrewsbury Road, Dublin, by the president of the Pharmaceutical Society of Ireland (Mr. Hugh P. Corrigan). On the educational side there is to be a medical exhibition throughout the week at the College, demonstrating modern developments in therapeutic agents to which some seventeen different manufacturers are sending displays, and the dean of the College of Pharmacy (Dr. Richard F. Timoney) is giving an intensive study course (limited to sixty pharmacists) on "Methods of Sterilisation and the Theory of Disinfection." There is also to be a film show at the College on October 13. Films to be shown include "Antihistamine Agents"; "Death of a Cell," and "Anti-tuberculosis Drugs."

At a symposium on Friday, October 16, the following are to be discussed: "The desirability of forming a body to co-ordinate the various aspects of Irish pharmacy" (a subject suggested by the Post-graduate Study Group), and "The rôle of the medical and pharmaceutical representative in the contemporary scene." The latter is in the form of a discussion on a paper to be presented by Mr. J. McKenna (Representatives' Association).

On the Wednesday night, Alderman M. L. Cashman, M.P.S.I. (a member of the Council of the Society), is giving an address on some aspects of the Health Service, Members of the various political parties are to speak, and Mr. Frank Loughman, T.D., is to preside

Social events include dinner, golf competition (in which women are eligible to take part, although the Irish Chemists' Golfing Society is confined to men) at Newlands golf club, Clondalkin. The dinner, at which Dublin's pharmacist lord mayor (Councillor P. A. Brady, T.D.) is to be guest of

honour, is confined to about 250 people, and already a large proportion of the accommodation is booked.

Poliomyelitis

ORAL VACCINE PLANS

PLANS for the production of an oral poliomyelitis vaccine were announced in Dublin on September 25, by Lederle Laboratories division of American Cyanamid Co. Mr. Ernest Bliss (managing director) said that the construction of new production and testing facilities would enable the company to produce enough of its vaccine each year to immunise about 40 million people. The new vaccine, Orimune, had, he said, already been demonstrated by clinical studies to be capable of giving immunity in one single oral dose. Messrs. Lederle (of which T. P. Whelehan, Son & Co., manufacturing chemists, Finglas, Dublin, are an associate), intend to make application to the United States Government to market the vaccine with a minimum of delay. Meantime, they had produced thirty separate trial batches, sufficient to immunise 2,600,000 people against all three types of poliomyelitis.

Duty on Tablets

A STATEMENT

MR. Hugh P. Corrigan (president, Pharmaceutical Society of Ireland) has issued the following statement regarding the recent duty imposed on certain tablets imported into the Republic (see C. & D., October 3. pp. 272 and 278): "Heretofore we have relied on standards for medicaments enforced by authorities in the countries of their origin. As there is no comparable bureau of standards in this country we are perturbed by the possibility that tablets which satisfy, for example, the Food and Drugs Act, may not comply with other essential requirements."

I mployees' Pay

AN INCREASE AGREED

BY reaching an agreement last weekend on an increase in pay for employees, the Irish Transport and General Workers' Union and the Wholesale Drug Federation have averted a strike. Strike notice, which was due to expire on October 10, was withdrawn following acceptance by the Union of the Federation's offer.

SPORT

Golf.—IRISH CHEMISTS' GOLFING SOCIETY, at Hermitage golf club, on September 30, Final outing of the season. Prizes presented by M. Baynes and Goya, Ltd. First Strokes, M. Murphy (24), 68; Second Strokes, J. Lennon (9), 71; First Bogey, K. Banks (one up); Second Bogey, J. Staunton (all flat); Best First Nine, M. Costello; Best Second Nine, P. Gray, That evening the Society held its end-of-the-season dinner at which the prizes were presented. Among those attending were Councillor P. A. Brady, T.D. (lord mayor of Dublin), and Messrs. H. P. Corrigan (president, Pharmaceutical Society of Ireland), P. McAuliffe (president, Irish Drug Association) and members of Ulster Chemists' Golfing Association.

LIVERPOOL CHEMISTS' GOLFING SOCIETY, at Woolton golf club, on September 30. Captain's Prize, G. Vaggers, 67. E. M. Murphy Prize, H. W. Cottle, 71. Merck Sharp & Dohme Prize, Dr. G. Heaton, 71. Johnson & Johnson Prize, G. N. Quayle.

TOPICAL REFLECTIONS

By Xrayser

Advertising of medicines

Although the papers of Dr. F. Wrigley and Mr. W. K. Fitch, presented at the second professional session of the British Pharmaceutical Conference, had, as their theme, the advertising of medicines, there was so marked a difference in their approach to the subject that it must have seemed to many present that it might have been better if each paper had been discussed separately (p. 263 et seq.). Both, it seemed to me, suffered a little from the tendency for discussion to switch from one to the other to the detriment of both. Much of what Dr. Wrigley had to say on the question of the promotion of medical specialities is known to us from personal experience of the medical representative and was, possibly because of that, less controversial than the survey of the advertising to the public of proprietary medicines so comprehensively covered by Mr. Fitch. The latter posed many problems which must have caused his audience moments of profound self-examination, particularly when he questioned whether the advertising of proprietary medicines was necessary in a country which had a comprehensive health service. A year or two prior to the inception of N.H.S., Sir Hugh Linstead stated emphatically: "It [the Government] cannot permit every device of modern publicity to incite the citizen to ignore the service which the State provides for him and to accept in its place one provided by the advertiser." (Patent Medicines—an indictment. Hugh N. Linstead, M.P.) (1946.)

Answers

One of the points raised by Mr. Fitch was the extent to which advertising induced the public to take medicine unnecessarily. "The widespread, persistent and exaggerated advertising of proprietary medicines makes the public conscious of disease . . . and encourages the cultivation of medicine drinking as a habit." (Linstead.) In his indictment, Sir Hugh also stated that the claims made for some medicines led to the public postponing seeking skilled advice and thereby prejudicing the success of proper treatment, a point forcibly made in the Bournemouth discussion by Mr. J. C. Hanbury. Mr. Fitch referred to the fact that the Pharmaceutical Society in 1947 endorsed what the Select Committee had said in 1914 with regard to control. That Committee recommended that the administration of the law governing the advertisement and sale of "Patent, secret and proprietary" medicines should be co-ordinated and combined under the authority of one department of state. In 1946, Linstead stated that the Minister of Health and the Secretary of State for Scotland must accept responsibility for the oversight of proprietary medicines in the interest of public health and must be armed with powers to prescribe standards for medicines and advertisements. And, with the exception of the British Code of Standards and the Food and Drugs Act, the position is not very different from that which caused those various authorities to call for control.

The pharmacist's rôle

The pharmacist, by virtue of his knowledge and training, is in a position to assess the claims put forward by manufacturers, and Mr. Fitch asks that he should apply that knowledge. One speaker pertinently questioned what was being condemned—the large sums spent on advertising, or the fact that we are not the only people allowed to sell the products; and that opens the further question of whether a monopoly of the sale of such products would redound to our credit. But, of course, such speculation is academic, for the manufacturer and advertiser aim at the widest distribution. There is, as Mr. Fitch indicated, no short answer to the problem, for the rhymes and jingles of commercial television, rapidly supplanting the time-honoured favourites of the nursery, are sending an ever-increasing number of consumers to the distributors of proprietary medicines. And the commercial exhortations to "cash-in" by buying display bonus quantities goes on apace. We perhaps know what we ought to do, but we "rather bear those ills we have than fly to others that we know not of." But what is it that makes cowards of us all?

TRADE NOTES

Sole Distributors.—Fassett & Johnson, Ltd., 86 Clerkenwell Road, London, E.C.1, have been appointed sole distributors in the pharmaceutical field of the Hero range of aerosol products.

Bonus Offer to be Withdrawn. — Boots Pure Drug Co., Ltd., Station Street, Nottingham, announce that their bonus offer for Fenox-Strepsils terminates at the weekend (October 10). The company also point out that their lignocaine injections (C. & D., September 26, p. 221) are packed in Viules (dental cartridges) and not in ampoules.

A New Gift Pack.—Lincoln Chemicals, Ltd., 55 Strafford Road, London, W.3, have introduced a gift pack of their Linc-o-Lin hand cream. The con-



tainer has a "sliding-drawer" and a transparent "window." The "drawer" is black and holds the 1-oz. and 4-oz. packs of the cream, the packs being in identical colours in a selection of pink, blue and green. A lace handker-chief with a border forms a ruffled cuff for the large pack.

Added to Range. — Merck Sharp & Dohme, Ltd.. Hoddesdon, Herts, announce that Decadron (dexamethasone) tablets are now being made available with enteric coating in addition to plain tablets. The coated tablets are issued in one strength only (0.5 mgm.) and in bottles of 100 and 500.

Redesigned Container.—Coleman & Co., Ltd., Wincarnis House, Westwick



Norwich, Street, are now issuing their Vita Cup in a container of new design with red background chocolate and white lettering. The redesigned tin enables much a quicker recognition of the name by the First customer. distribution to the trade is in the 6-oz. size to be followed later by the 4-oz. and 16-oz, sizes.

Increasing Production Facilities. — Howards of Ilford, Ltd., Ilford, Essex, announce that they have decided to increase their production capacity for Sorbitol. A new unit is planned, and it should be "on stream" in a little over a year. It will give an additional capacity of a thousand tons a year of industrial humectant grade 70 per cent. syrup. Sorbitol is a versatile humectant with many applications, particularly in the

cosmetic, food and paper trades. It is also considered that the material has considerable potentialities as a chemical raw material.

Bonus Offers

GOLDEN, LTD., 7 Grosvenor Street, London, W.1. L'Oreal Shining Look. Twelve charged as ten. October 28 to November 30.

CROOKES LABORATORIES, LTD., Park Royal, London, N.W.10. Karvol inhalant capsules. Thirteen to doz. on 2 doz.; 14 to doz. on 6 doz.

ROSE KIA-ORA SALES Co., St. Albans, Herts. One doz. Suncrush Orange free

with every six-case order until November 7. Each order must include at least three cases Suncrush.

Scott & Turner, Ltd., Andrews House, Newcastle-on-Tyne, 1. Special terms for orders of one doz. or more in return for display. During winter months.

THERMEGA, LTD., 37 Thurloe Street, London, S.W.1. Thermega blankets and pads $7\frac{1}{2}$ per cent, extra discount. Until November 15.

THE BRITISH DRUG HOUSES, LTD., London, N.1. Pernivit and Pernicream. Thirteen to doz. for three doz. lots.

NEW PRODUCTS

Framycetin with Hydrocortisone. — Genatosan, Ltd., Loughborough, Leics, have introduced Framycort ointment in 10-gm. tube. The product contains framycetin sulphate 0.5 per cent. and hydrocortisone acetate, B.P., 0.5 per cent. in greasy base.

A New Presentation.—Pharmaceutical Specialities (May & Baker), Ltd., Dagenham, Essex, announce a new presentation of Rovamycin brand spiramycin: a 250-mgm. capsule. The pack is a bottle of twenty capsules which are additional to the original tablet presentation of the product. The tablets are now reduced in price.

Novobiociu Granules. — Upjohn of England, Ltd., Fleming Way, Crawley, Sussex, have launched a new speciality Albamycin T pædiatric. It is presented in the form of flavoured granules to which 50 mils of water are added before dispensing, giving a total volume of 60 mils of suspension. Each 5 mils of the suspension contains 62.5 mgm. of Albamycin (novobiocin) and 62.5 mgm. of tetracycline.

Granules for Penicillin Syrup. — Glaxo Laboratories, Ltd., Greenford, Middlesex, have introduced Crystapen V granules for syrup—a preparation which, when reconstituted with water, produces a flavoured syrup containing 125 mgm. penicillin V in each 5 mils. Recommended dosage for children is one to two teaspoonfuls and adults two teaspoonfuls or more, four times a day (or more frequently if necessary). It is supplied in bottles of 12 doses (to make 60 mils).

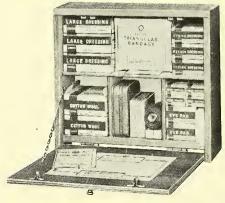
Factory First Aid.—Cuxson, Gerrard & Co., Ltd., Fountain Lane, Oldbury, Birmingham, offer a first-aid outfit, the

Sanoid No. A136W. Catering for factories with eleven to fifty employees as required under the new Factory First-aid Regulations. The case is strongly made with box joints and is finished in oak. It is fitted with spring catch and hanger.

Stain Remover in Paste Form. — A new stain remover in paste form, K₂r, is marketed by Newton Chambers & Co., Ltd., Thorncliffe, Sheffield. The makers claim that it lifts the stain clean out of the cloth and therefore does not leave a ring. It is simple in application, being spread with a fingertip, and there is no need for soaking or rubbing. It should not be used with rayon, proofed garments such as raincoats, or easily washable fabrics such as cotton and poplin. The tube comes in a carton containing an instruction for use leaflet and is packed in a one-dozen display outer.

A New Perfume.—Parfums le Galion (U.K. distributors: R. T. R. Malynn, Ltd., 1 Milk Street, London, E.C.2), announce the introduction of a new perfume: Snob, "Le plus noble parfum du monde." Snob perfume is composed of "roses of France, roses of May, roses of Bulgaria to which have been added blue hyacinth, jasmin and vervein." The perfume is available in $\frac{1}{8}$, $\frac{1}{4}$, $\frac{1}{3}$, $\frac{1}{2}$ and 1 oz. sizes.

Colour Bath Essence.—Ford Jackson & Co. (Sales), Ltd., 129 Carlton Street, Castleford, Yorks, are distributing Quessence colour bath essence in a small bulbous plastic bottle with screw cap from which the contents are squeezed into a filled bath. The product is claimed to make the water delightfully soft, light and refreshing.





Lozenges for Sore Throats. CIBA Laborato Laboratories, Ltd., Horsham, Sussex, are intro-ducing DB throat lozenges on Octo-ber 12. The lozenges are packed in tube of twenty and each unit of a tubes dozen packed in an attractive display outer complete with price tickets and crown-The trade ers.

terms, which are given elsewhere, offer 80 per cent. profit on outlay.

Cream for Rheumatic Conditions.—Dols' Volatalise Flannel, Ltd., 231 Finsbury Pavement House, London, E.C.2, have introduced Dols' rub cream for the relief of rheumatism, lumbago, and muscular aches and pains. The cream replaces Dols' rub in its liquid form which the company are no longer permitted to transport by road or rail. Large scale publicity for the cream is planned in the Midlands and North commencing on October 15, the company states. The cream is packed in a cartoned tube.

Influenza Virus Vaccine. - Pfizer, Ltd., announce that a new speciality Flubron, a refined and concentrated vaccine against virus influenza, prepared from Asian, A type and B type strains of influenza virus, is now available. It should be stored in a refrigerator. The adult dose consists of a single injection of 1 mil subcutaneously. The makers recommend that chronic bronchitics and others with chronic respiratory infections, diabetics, chronic cardiacs and those undergoing steroid therapy should be given a second dose not less than two weeks after the first. The packs are a box of 6 x 1-mil ampoules and a multi-dose vial containing 10 mils.

Iron Injection for Piglets.—Cooper, MacDougall & Robertson, Ltd., Berkhamsted, Herts, have launched Injex, an iron injection for piglets. The company claim that the preparation is rapidly and completely absorbed into the system, is fully tolerated and has the effect of providing greater resistance to infection and diseases such as scours and pneumonia, particularly during the critical first weeks of the piglet's life. Injex is supplied in 20 mils (sufficient for 10 piglets) and 50 mils.

Seed Treater and Dressings. — Plant Protection, Ltd., Bolton House, 61 Curzon Street, London, W.I, announce "a major British advance" in the field of cereal seed dressings. As a result of work done at the company's Fernhurst research station, the following products are being marketed:—Plantector seed treater for applying liquid or powder dressings or a combination of both. The Plantector is the first and claimed the only machine of its kind in the world; Ceresol, a liquid seed dressing for the control of disease and wireworm, and the first dual-purpose liquid dressing to be marketed in this or any other country; and Agrosol the first liquid



organo-mercury fungicidal dressing to be made in Britain. One of the advantages of liquid dressings over powders is that they reduce the amount of dust present during application in the merchant's mill and when the seed is subsequently handled on the farm. The machine is being manufactured for the company by L. R. Knapp & Co., Clanfield, Oxford. In England, Wales and Northern Ireland the machine is being marketed through the sales offices of Imperial Chemical Industries, Ltd.; in Scotland, through Scottish Agricultural Industries, Ltd.; and overseas, I.C.I. companies and their agents.

New Cosmetic Range. — Bourjois, Ltd., 2 Old Bond Street, London, W.1, announce that their new range of cosmetics perfumed with Roman Holiday



(see C. & D., June 20, p. 647), is being released on October 15. Supplies have been held up because of the dispute in the printing trade.

Lipstick Compact with Mirror. — Max Factor Hollywood and London (Sales), Ltd., 16 Old Bond Street, London, W.1, are marketing what they claim is the first oval lipstick compact

with its own mirror, the Hi-Style. Since it was launched on the American market a year ago, Hi-Style has "swept the board" in lipstick sales. The compact has a Florentine design in gilt on the outside of the lid. Pressure of the lefthand thumbnail opens the case inside which is a lipstick tilted upwards for easy removal. Opcned, the lid reveals a lip-sized mirror to use for applying the lipstick. Hi-Style compact is in black and tortoiseshell shades and the lipstick inside is in the Hi-Fi formula. A "peephole" in the outer carton reveals a small gilt label on the underside of the compact on which is printed the shade of the Hi-Fi lipstick.

Puft Shell Compact. — Goya, Ltd., Badminton Court, Amersham, Bucks,



have launched a new beauty puff shell compact to replace the company's cocktail compact. The compact is practical and attractive in shape and includes a mirror.

Soap Novelties.—Hazlewood & Sons, Ltd., Patricroft, Manchester, are marketing two new soap novelties: Robin Hood a cartoned coloured figure of the famous Sherwood forester and a nursery twin set containing coloured soap models of Red Riding Hood and Boy Blue.

Cream Hair Dressing. — A "feather-light" dressing in cream form to give the "most natural radiant shine" to women's hair is being offered by Golden, Ltd., 7 Grosvenor Street, London, W.1, under the title Shining Look. Shining Look is from L'Oreal, Paris, and an advertising campaign is promised by the makers starting October 28. The dressing is packed in tube, twelve tubes in a display unit.

INFORMATION WANTED

Jalla face cloth hand mitts Rickalet blood purifier adult Gala ointment Gerioptil capsules



INQUESTS

Arsenic Sprays Condemned.—A rider that arsenical sprays used on potato crops should be prohibited was added by an inquest jury at Bromyard, Herefordshire, on October 2, when they returned a verdict of death by misadventure on a farm labourer's wife who died after drinking water contaminated by a potato spray mixture. The inquest was on Mrs. Gwendoline Evans, Warren Farm, Bringsty, near Bromyard, who was said by a pathologist to have died from inflammation of the heart muscles, which might have been aggravated by arsenical poisoning. Opening the inquest, the North Herefordshire coroner said that on August 28 and again on September 2 the potato crops at the farm had been sprayed prior to being lifted. On September 3 the whole family became ill, and three days later Mrs. Evans was found dead in bed. A police official said that when he tested the spraying equipment he found that the pump which sent water from the supply tank into the spray tank was faulty, allowing a flow-back from the spray tank into the main house supply at a rate of one-and-a-half gallons every seven minutes. A public health inspector, said that when first tested the house supply tank showed 180 parts per million of arsenic as against a safe standard of 05. The coroner, summing up, said to the jury: "In the light of what has happened, it has occurred to me to seek your observations on whether the use of such a deadly poison is justified for the purpose of making these potatoes more easy to lift, or even used at all with a commowhich soon afterwards is used by all and sundry as a staple food.' After hearing the jury's verdict and rider, the coroner said he would forward the rider to the appropriate authorities for their eventual consideration.

COMPANY NEWS

Previous year's figures in parentheses

TAYLORS DRUG CO., LTD.—Messrs. Gordon Edward Fairclough and William Alexander Taylor, M.P.S., have been appointed to the board of the company.

TAYLORS (CASH CHEMISTS), LONDON, LTD. — Messrs, Henry Denis Frederick Blackmore, M.P.S., and Frederick James Trott have been appointed to the board of the company.

W. B. CARTWRIGHT, LTD.—Messrs. Arthur Bailey, M.P.S.; Ronald William Gillham, F.P.S., D.P.A., F.R.I.C.; and Sidney Reginald Dawson have been appointed to the board of the company.

CROOKES LABORATORIES, LTD.—Mr. Neil A. Campbell has joined the board of directors and has been appointed chairman with Viscount Furness as deputy chairman.

CUXSON, GERRARD & CO., LTD.—Mr. A. D. Gerrard has relinquished his managing directorship of the company which he has held since 1936. Messrs. J. H. Read and H. L. Curry have been appointed joint managing directors. Mr. A. D. Gerrard remains chairman of the company.

HORLICKS, LTD.—Final dividend is raised by $2\frac{1}{2}$ per cent. to 15 per cent. for the year to March 31, making with the higher 10 per cent. ($7\frac{1}{2}$ per cent.) interim, a total of 25 per cent. (against 20 per cent.). Group profits are £1,059,489 (£1,069,352) and after lower tax, the balance is up from £503,675 to £530,750,comprising £421,249 (£387,754) for the company and £109,501 (£115,921) for subsidiaries. Cost of the total dividend, £186,719 (£143,750).

UNITED GLASS, LTD.—In an interim report to stockholders, the board announced on September 30 that they intend to form a subsidiary to be known as United Glass (Thermoplastics), Ltd., to produce blown and moulded plastic containers and associated injection mouldings. Those products, they say, will be complementary to, rather than in competition with, glass containers. Profit for the six months to June 30 were lower than those for the corresponding period of 1958. However, as a result of the greater volume of sales to date and with a healthy order book for the closing months, increased turnover for the year is anticipated.

GLAXO LABORATORIES, LTD.-A final dividend of $8\frac{1}{2}$ per cent., making 14 per cent. on capital increased by a one-for-two serip issue for the year to June 30, is announced which represents a rise of $2\frac{1}{3}$ per cent, over the previous year's $11\frac{2}{3}$ per cent, equivalent total. After tax of £2,858,000 (against £3,148,000) group profits are £3,017,796 (£2,610,566). The proportion of profits attributable to outside holders is £54,000 (£61,696). Group profits in-clude revenue of previous years of £108,000 (£136,212). The charge for tax is after crediting £112,000 (nil) over-provision last year. The directors propose to place to general capital reserve, including obsolescence and replacement, £500,000 (£1,500,000), to general revenue reserve £500,000 (nil) and to future research and development £600,000 (nil). The final dividend (£356,473) and £430,351 requires £619,190 (£545,115) is carried forward by the company.

MARRIAGES

HANNA — SIMPSON. — At All Saints Church, Antrim, Northern Ireland, recently, Lewis Hanna, M.P.S.N.I., 77 Howard Street, South Belfast, to Clara Simpson, S.R.N., B.T.A., of Bellaghy.

SINCLAIR — FAIRGRIEVE. — At Old Parish Church, Tranent, on September 26, Ian Robert Landles Sinclair, M.P.S., 3 Easter Drylaw View, Edinburgh, to Margaret Fairgrieve, 70 Young Avenue, Tranent.

DEATHS

BRADBURY. — On September 26, after a short illness, Mr. J. S. Bradbury, M.Sc., F.S.M.A., M.B.I.M., sales manager, Wigglesworth, Ltd., Westhoughton, Bolton, Lancs, aged fiftyeight. Mr. Bradbury joined Wigglesworth, Ltd., twenty-five years ago as sales representative and was promoted assistant sales manager in 1945, and sales manager in 1948.

BURNETT.—On September 25, Mr.

Alexander Irvine Burnett, M.P.S., The Parade, 299 High Road, South Benfleet, Essex. Mr. Burnett qualified in 1919.

PETER. — At Birkenhead General Hospital on October 4, Mr. George Peter, a representative of Chesebrough-Pond's Ltd.

A colleague writes: "Mr. Peter joined the Chesebrough Manufacturing Co. in 1924 and pioneered the Vaseline range of products throughout the whole of the north of England. In later years, when the company expanded, he concentrated in Lancashire and especially in the Liverpool area and was with Chesebrough-Pond's, Ltd., at the time of his death. He was a gentleman of the old school of travellers and will be well remembered in many parts of Lancashire. He will be greatly missed not only by his colleagues but by his many friends in both the retail and wholesale sides of pharmacy. He was taken ill on September 28 and though his condition was thought to be satisfactory he had a relapse from which he never recovered."

SEARLE.—Recently, Mr. James Searle, for many years a director and secretary of Ernest Jackson & Co., Ltd., Crediton, Devon. Mr. Searle had been with the company for fifty-seven years.

SLOPER.—On September 24, Mr. Lewis John Sloper, M.P.S., 401 Wimborne Road, Bournemouth. Mr. Sloper qualified in 1913.

WHITEHALL.—On September 19, Mr. Gordon Whitehall, M.P.S., 126 Lower Bents Lane, Bredbury, Cheshire. Mr. Whitehall qualified in 1924.

BUSINESS CHANGES

A. OPIE & CO., LTD., 38 Market Place, Penzance, has closed through the retirement of Mr. B. I. Opie, managing director.

KODAK LTD.'s special chemicals sales department (previously known as the special chemicals and plastics sales division), has moved to Kodak House, Kingsway. London, W.C.2 (telephone: Holborn 7841), the head office of the company.

CHAS. H. WINDSCHUEGL, LTD. (a member of the Amber group of companies) have left their City address and established offices at the group head-quarters, 11a Albemarle Street, London, W.1 (telephone: Mayfair 6161).

Appointments

EVANS MEDICAL, LTD., have appointed Mr. S. L. Maguire, M.A., Ll.B., deputy general manager of their London house at Ruislip, Middlesex.

RAPIDOL, LTD., 27 Dover Street, London, W.1, have appointed Mr. Frank Waters their sales manager, chemists' division.

KELDON, LTD., Wadsworth Road, Perivale, Middlesex, have appointed Mr. Francis MacDonald representative for their North-east territory.

POLACK & SCHWARZ (INTERNATIONAL) N.V., Holland, have appointed Mr. S. A. Samama to succeed the late Mr. H. Pronk as manager of the purchasing department.

PROTEIN FROM VEGETABLE MATERIAL

Pilot production in London

FURTHER details of the new process for obtaining protein from grasses, peanuts, etc. (see C. & D., September 26, p 218), were given on September 30 to the technical Press by British Glues and Chemicals, Ltd., the company responsible for the development of the process. Mr. I. H. Chayen (assistant managing director) who headed the team that worked out the process said that they started off by utilising a method evolved and used by the company for the past ten years for extracting fat from cellular material such as bones or suet. One major difficulty which had to be overcome was getting the right force to break the vegetable cells without pulping and emulsifying the components that could never be separated later.

The process starts with the vegetable material and alkaline water being fed into the impulse renderer. There, shock waves are applied which break up the cells in less than a second. The resulting liquor after passing through a vibrating screen, is pumped to a three-way centrifuge. The free oil separates and is discharged through one pipe and removed from the process. In the case where the raw material is groundnuts two-thirds of the oil comes off at that stage and requires no further purification. The insoluble cellulose, fibre and starchy components come out of another pipe as a slurry and are drained of water and dried, to give a useful cattle-feed in the case of oil-seeds, or a fibre suitable for hardboard or cardboard manufacture where grasses are used.

The protein with its combined oil comes out of the third pipe still in solution but free from the indigestible fibre and starches. Weak sulphuric acid is used to neutralise the alkaline solution and the protein-oil complex precipitates like a simple protein and can be concentrated in a basket centrifuge to a thick paste, consisting of about 70 parts of water, 20 parts of protein and

10 parts of oil. The paste is then transferred to a conventional solvent extraction plant where the water is driven off, the oil removed by a solvent (toluene) from which it is subsequently recovered. A virtually pure protein, free of taste and odour and in a highly digestible form remains.

Where grasses are employed the whole process is very similar to that

of groundnuts but an extra stage or two is needed. At the final solvent separation when grasses are employed, besides protein a thick syrupy mass containing chlorophyll, sterols, hormones and vitamins is obtained.

The company has a pilot plant in production at Bermondsey, London, and they hope to provide on a royalty basis, economical-sized units to overseas countries especially to those where there is difficulty in providing the population with a diet sufficient in animal or fish protein.

NORTHERN IRELAND HEALTH BOARD

Amendments to drug-testing scheme?

AN official answer is awaited by the Northern Ireland General Health Services Board, after discussions with the Ministries of Health and Local Government and Home Affairs on proposed amendments to the drug-testing scheme. That was reported by the pharmaceutical advisory committee at the Board's September meeting held in Belfast. The committee also reported that no further progress had been made towards an agreed procedure on dispensing by unsupervised, unqualified assistants. porting on the inspection of certain premises, the committee observed that though they were old-fashioned and untidy they could not be regarded as entirely unsatisfactory.

The Local Pharmaceutical Committee, replying to a circular, stated that although a market research organisation operated to a limited extent in Northern Ireland, the Committee believed that the few chemists approached did not allow the organisation to inspect prescriptions. The Local Committee strongly disagreed with such practice and advised chemists not to provide any such information.

The committee reported that a request had been received for an increase of 20 per cent. to 63s. per sample in the charge for testing surgical dressings. It was pointed out that increases of 15 per cent. in 1957, 20 per cent. in 1958 and

15 per cent. in 1959 had been applied to charges made for tests on behalf of the textile industry, but that there had been no increase in the charge to the Board since 1956. The committee agreed to the request subject to the approval of the Ministry.

The pharmaceutical officer reported that an error had been admitted by the Board's analysts in compiling an analysis of a drug dispensed on a test prescription. The analyst's report had been the subject of an investigation by the services committee which had dismissed the complaint on discovering the error. The analysts had apologised to the Board. After discussion the pharmaceutical committee agreed that rota services appeared to be working satisfactorily but that an amendment to the Sunday hours in one area might be desirable. The committee decided to seek the views of the Local Pharmaceutical Committee.

"N.P." Prescriptions

The pharmaceutical committee referred to a minute of the medical advisory committee, in which it was suggested that doctors should be informed of the desirability in suitable cases of inserting the letters "N.P." after prescriptions so that the drug would be named on the container. That would lead to less waste in the patient's home and, in addition, hospital medical staffs would have some indication of the drug prescribed. After discussion the committee agreed that the matter should be deferred pending a decision in Britain where there was also a divergence of opinion on the matter.

Some concern was expressed about a number of recent cases in which pharmacies had been closed down without notice being given to the Board. Whilst appreciating the difficulties facing chemists, the Board agreed that future cases should be referred to the chairman of the services committee.

The minutes of the medical advisory committee contained a letter from the Ministry of Health and Local Government asking if the Board would be prepared to implement at an early date the recommendation of the Cohen Committee in connection with the prescribing of preparations for the treatment of coeliac diseases, etc. The central medical committee had already agreed that the recommendations should be accepted. After discussion the pharmaceutical committee agreed to accept the recommendations of the Cohen Committee that the following preparations



should be classified as drugs: (a) Preparations for the treatment of allergy and diseases such as sprue, coeliac disease, infantile gastro-enteritis (Allergilac, Lacidac (half cream and separated), Sprulac, Trufood Prosol, and similar preparations); (b) casein and other protein hydrolysates (Casydrol, Pronutrin, and similar preparations). The secretary was instructed to notify doctors accordingly.

Accounts for pharmaceutical services totalling £219,902 were passed for pay-

ment.

PERSONALITIES

MR. LAURIE A. WOODHEAD, who is the new president of the



Scientific Instrument Manufacturers' Association, has been closely connected with the electronics industry for over forty-two years. Mr. Woodhead first joined A. C. Cossor, Ltd., in 1930 and later became chief of test for valves and cathode ray tubes at a

shadow factory. In 1943 he was appointed chief engineer by Cossor of a Ministry of Information unit and in 1946 was seconded by the company to their agents in South Africa to set up a factory. He returned to England in 1949 and became manager of the instrument division of A. C. Cossor, Ltd., in 1950. He is now a director and general manager of Cossor Instruments, Ltd. Mr. Woodhead has constantly devoted himself to the interests of the British scientific instrument industry and at various times he has been chairman of the electronics section, chairman of the export committee, honorary secretary and vice-president of S.I.M.A.

CAPTAIN R. A. VILLIERS, who is a new director of the Scientific Instru-



ment Manufacturers' Association, entered the Royal Navy in 1925 from R.N. College, Dartmouth August 1941 he torpedo was officer and first lieutenant H.M.S. Norfolk, in 1942 was promoted to Commander. For his services he was appoin-

ted Commander of the British Émpire in 1952, returned home and assumed command of a research and development establishment. In 1956 he attended the Imperial Defence College and from 1957 until his retirement in 1959 he was the United Kingdom's naval representative with the N.A.T.O. military agency for standardisation and chairman of the naval board in London.

MR. B. I. OPIE, M.P.S., who retired recently (see p. 290), has been in pharmacy since 1910. He was apprenticed at Redruth and studied at the Westminster College of Pharmacy, qualifying in 1916. From 1921 to 1954 he managed the Redruth branch, afterwards he became associated with the company's main pharmacy at Penzance.

MR. J. E. ADDERSON, F.P.S., F.L.S., of Cardinals Walk, Leicester, is leaving to take up an appointment as chief pharmacist at University College of the West Indies Hospital in Jamaica. His wife, Mrs. K. M. ADDERSON, M.P.S., will travel with him along with their baby daughter. Mr. Adderson is a lecturer at the School of Pharmacy, Leicester College of Technology, of which he is a former student, he has been lecturing for nine years and served his apprenticeship in a Leicester pharmacy. Since 1956 he has been doing research work on West Indian plants

under the auspices of Nottingham University. Mr. Adderson is the present assistant secretary of the Leicester and Leicestershire Branch of the Pharmaceutical Society of Great Britain. Mrs. Adderson has experience of hospital and retail pharmacy.

Correspondence Conference Cartoon

SIR,—There are officers and Officers. In your artist's sketch of visitors to the Conference I am described as Chairman of Executive of the Scottish Department, the Pharmaceutical Society of Great Britain; that honour was mine but the present holder of the position is Mr. Andrew Officer—well known to Conference visitors.

JOHN B. GROSSET [There are also clocks and clocks. We apologise to Mr. Officer and Mr. Grosset for putting the "clocks" back.—EDITOR.]

LOUGHBOROUGH'S NEW FACTORY

Increased production facilities



MR. J. W. Dart (president, the Rexall Drug and Chemical Co. of the United States) officially opened a new factory of Riker Laboratories, Ltd., at Wharncliffe Road, Loughborough, on Septem-0. The new unit manufactures
Rexall and Riker products. ber 30. Facilities cover tablet granulation, compression and coating; aerosol filling; and a packing hall for a wide range of tablet specialities as well as capsules and gels. The layout is so arranged that raw materials enter at one end of the building for storage prior to processing, and finished goods leave at the other end for warehouses in the main Rexall-Riker building in Morley Street, Loughborough. The total cost of acquiring and equipping the new factory was about £70,000 and about 120 persons are employed in 20,000 sq. ft. of working space. Equipment includes electronic tablet counting machines; automatic machines for erecting cartons and inserting cotton wool; and tablet making machines. The moisture

content of granules before each compression is electronically checked. All tablet coating and the compressing of some tablets is carried out in low humidity air-conditioned rooms. Steam is provided by a new type Clayton steam generator and is one of the first of its size installed. Steam is produced as required on the "flash-evaporation" principle. Most boilers generate steam slowly.

The Wharncliffe Road factory brings the number of production units in the Rexall Group in the United Kingdom to four. Following the purchase of Carnegies of Welwyn early in 1959, the organisation now owns a modern fine chemical plant close to London, and a few months ago Neotechnic Engineering, Ltd., was acquired to produce aerosol valves and light engineering products.

Riker Laboratories, Ltd., now employs over 270 personnel, of which more than fifty representatives call on doctors in Great Britain; there are also overseas representatives.

BRITISH PHARMACEUTICAL CONFERENCE

Modifying the Duration of Drug Action

PAPERS AND DISCUSSION AT SYMPOSIUM SESSION

THE theme of the symposium session of the British Pharmaceutical Conference meeting, Bournemouth, September 24, was ways in which drug action may be modified in duration. It was developed in papers presented by Professor Andrew Wilson and Dr. R. P. Edkins.

PHARMACOLOGICAL CONSIDERATIONS

ANDREW WILSON, M.D., PH.D., F.R.F.P.S.

SUCCESS or failure in modifying the action of a drug can be gauged by whether the patients who receive treatment with the modified drug are cured or relieved of their symptoms more rapidly, more completely, or more frequently than with the unmodified drug. It is, however, necessary to distinguish pharmacological effects from the effects of suggestion.

Whatever measurements are chosen as an index of pharmacological action, no valid comparison of drug action can be made without them. The nature of the comparison of course depends on the particular circumstances. The apparatus required may be complex and

Modification of drug action may be required in order to provide a more rapid therapeutic effect, a more prolonged and sustained action with less frequent administration, or a safer or less disturbing therapeutic effect less liable to be accompanied by other actions or side-effects of the drug.

Accelerating the Onset of Action

Many drugs absorbed from the alimentary tract are reasonably well absorbed within 15-45 minutes of oral administration. There are occasions, however, when because of the severity of illness or because the patient is unable to swallow or retain substances

given by mouth, a more rapid or alternative method of treatment is necessary. Herein lies the importance of providing sterile preparations suitable for intravenous as well as for intramuscular injection.

Sometimes the onset of action of a drug normally administered by intramuscular or subcutaneous injection is delayed by the presence of gross ædema or adipose tissue, or on account of peripheral vascular failure. Here again a change to intravenous injection, for example of mersalyl, insulin or of an analgesic such as morphine, provides a satisfactory answer to the problem. The use of hyaluronidase to increase the rate of absorption by increasing the subcutaneous dispersal of fluid is a valuable therapeutic method of rapidly restoring water and electrolyte balance, especially in infants and young children.

The rapid absorption of iron by intramuscular injection of iron-dextran complex is a notable contribution which might be expected to stimulate further work in this field. A non-irritant intramuscular preparation of aminophylline would be a welcome alternative to intravenous injection—at present the only effective method of giving this valuable drug.

More use could be made of the sublingual route of administration. The success of nitroglycerin and isoprenaline tablets for the treatment of angina and bronchospasm is well recognised. The rapid relief of symptoms and the ease with which the effective dose can be quickly determined, specially commend this method for emergency treatment. It could with advantage be extended to the study of potent analgesic and cough suppressant drugs. The same could be said of administration of drugs in aerosols.

There are several reasons for attempting to prolong the action of a drug, the most important of which is to maintain the therapeutic effect for longer periods than can be obtained after administration of a single dose. Moreover this might be expected to diminish the waxing and waning of drug action following frequent administration of single doses. Other reasons such as saving the time of the nursing staff, more convenience for the patient, or avoiding reliance on his memory are probably less important and less convincing.

There are a number of outstanding examples where this method of modifying the action of a drug has been successful, notably in the treatment of certain endocrine diseases such as diabetes mellitus, diabetes insipidus, Addison's disease and related conditions requiring supplemental therapy with adrenal cortex hormones. In all these instances the drug has been administered parenterally, usually because of its inactivation or inadequate absorption in the gastro-intestinal tract.

The success which follows attempts to prolong the action of a drug must be judged by whether the modified drug produces an adequate effect for the desired period without undue delay; this last point is important but not so vital as the other, since if necessary the action can be initiated by administration of the unmodified drug.

Apart from the systemic administration of drugs some attempts have been made to prolong the action of those which are intended only for local administration. The most notable example is the use of adrenaline as a vasoconstrictor to delay absorption and prolong the action of local anæsthetic drugs. Many instances of ischaemic necrosis have resulted from the use both in medical and dental practice of high concentrations of adrenaline. The use of compressed pellets of hydrocortisone for the treatment of ulcers in the buccal cavity focuses attention on the importance of exploring further this method of prolonging the local action of drugs.

Intensity and duration of action depend on the concentration of drug on the cells on which it acts and this is determined by its rate of absorption, distribution to and clearance from the tissues. Thus the action of a drug may be prolonged by reducing its rate of absorption, by delaying the rate at





FROM NORTH OF THE BORDER: Some, though by no means all, of the Scottish pharmacists present at the Conference. Among them are several who no longer claim domicile in their native country.

which it is inactivated, or if it is excreted unchanged, by retarding its excretion.

In general the most practical and successful methods depend on reducing the rate of absorption and, because of the greater number of variable factors which influence absorption from the gastrointestinal tract, modification of drugs for parenteral administration have produced more satisfactory results than those for oral administration.

Modifying Solubility

The more water-soluble the drug the more rapidly it is absorbed; therefore absorption will be delayed when the drug is administered in a relatively water-insoluble form. This can be done by changing the solvent to an oily vehicle or by adding to the aqueous solution, a colloid such as gelatin, polyvinylpyrrolidone or dextran. The use of gelatin has been effective in delaying absorption of corticotrophin but is not reliable for the administration of heparin. Some anxiety has been expressed about the carcinogenic potentialities of polyvinylpyrrolidone but this should not be allowed to preclude its use for short-term therapy, or where the patient already is the victim of malignant disease. It would be interesting to know whether a long-acting potent analgesic can be formulated with this substance.

The action of some drugs, notably the stable steroid hormones, can be prolonged by preparing them as compressed or fused pellets. Subcutaneous implantation of DOCA pellets for the treatment of Addison's disease is one of the classical examples; much more frequent use is made of this method of administering ostrogens and androgens. Sublingual absorption of methyl testosterone is another use, and more recently the prolonged local action of hydrocortisone in the buccal cavity. Oral administration of pellets has also promising application in veterinary practice. These different methods of administering pellets doubtless pose a number of problems in formulation.

There are of course other factors which determine the extent to which drugs are absorbed from the stomach

whether the drug is taken before or after a meal; individual variation in the amount of drug absorbed is another important factor.

There are two examples in veterinary medicine which illustrate the successful modifications of drug action on the alimentary tract. The first concerns the use of the "cobalt bullet." Cobalt deficiency in ruminants gives rise to a deficiency in the production of vitamin B₁₂ by micro-organisms in the rumen. Thus in certain areas of Southern Australia when sheep and cattle are grazed on pasture consisting predominantly of Phalaris tuberosa, the animals frequently develop a demyelinating disease, Phalaris staggers, which is often fatal. This can be prevented by oral administration of cobalt which promotes an adequate biosynthesis of vitamin B₁₂. The specific gravity of the pellets containing cobaltic oxide in china clay was such that when swallowed they were transported fairly rapidly to the reticulum, where because of their density, they remained and from them cobalt was released for many weeks.

It has been demonstrated that in the treatment of nematode infections of sheep the particle size of phenothiazine is an important factor in determining its therapeutic efficiency.

Apart from altering its chemical structure there are few practical methods of modifying the rate of inactivation of a drug. One notable example is the inhibition of enzymes involved in the inactivation of drugs.

Enzyme Inhibition

A new approach to this aspect of prolonging drug action is the discovery of some compounds which by themselves have little or no action but which are able to prolong the action of a variety of other drugs by inhibiting the enzyme systems in liver microsomes which inactivate them. β-Diethylaminoethyl diphenylpropylacetate (SKF525-A), 2:4-dichloro-6-phenylphenoxyethyl diethylamine (Lilly 18947), and isopropyl-2-isonicotinyl hydrazine (iproniazid, Marsilid) have been shown to interfere with the metabolism of barbiturates,

amphetamine, acetanilide, pethidine and amidopyrine. These substances have not yet been investigated sufficiently to establish their therapeutic value but their potential uses are considerable.

There are several examples of drugs whose actions can be prolonged by modification of their chemical structure. The different rates of inactivation of barbiturates provide a selection of compounds varying in duration from two or three hours (quinalbarbitone) to 12 hours or more (phenobarbitone).

"Classic" Delaying Method

One of the classical methods of prolonging drug action is the curtailment of salt whilst administering bromides. It has been known for many years that the therapeutic benefit of bromide depends on establishing an optimum concentration of it and maintaining this by balancing the amount absorbed and excreted. This drug has been largely discarded but I hope the wisdom of knowing how to use it remains. The excretion of drugs, such as penicillin and aminosalicylate, which are eliminated by tubular excretion can be delayed by concurrent administration of caronamide or probenecid which interfere with transport mechanisms in the renal tubules. The practical problem of conveniently maintaining an effective concentration of the interfering drug has severely restricted the therapeutic usefulness of this method.

The action of some drugs may be prolonged on account of their storage in tissues from which they are slowly released and excreted. This property may be important in the choice of a particular drug from several which have similar pharmacological actions.

One of the most important therapeutic tasks is the problem of choosing from a number of drugs with similar actions the one which is likely to be most suitable for the individual patient. Because of the wide individual variation in response, many potent and therefore potentially toxic drugs must be administered in such a way that the dose can be adjusted according to the individual need and response. Most experienced clinicians adopt this procedure when prescribing treatment with well-established drugs such as digitalis, insulin, salicylates and morphine. Unfortunately, this principle seems to be overlooked when newer drugs are used. Thus when a new drug is tried in the recommended dose with little or no therapeutic effect, or if its effect is accompanied by nausea, headache or some other uncomfortable side-effect, instead of adjusting the dose or frequency of administration treatment is too often abandoned in favour of some other drug or mixture of drugs.

This is one of the chief reasons why mixtures of drugs in one preparation have become so popular. A critical examination of many of these however reveals no evidence of any rational pharmacological basis for therapy. Preparations containing an active drug and one of its antagonists have little to commend them.

One of the best reasons for encouraging attempts to reach the moon is not so much for what is likely to be found there, but because a considerable

increase in the amount of knowledge will be gained in the process of reaching this objective. The same can be said of many investigations which have been pursued on the theme of modifying drug action. This is meant as a tribute to the ingenuity of pharmaceutical formulation, but it is intended also to convey a plea for a more realistic appreciation of the pharmacological limits which condition such manipulations of drugs.

PHARMACEUTICAL CONSIDERATIONS

ROBERT PATRICK EDKINS, B.PHARM., PH.D., F.P.S., A.R.I.C.

unmodified oral preparations, speedy onset of action is dependent upon rapid disintegration, and it is doubtful, even now, whether its importance is fully appreciated. In various countries the permitted disintegration times of official tablets differ widely; the British Pharmacopæia with a few exceptions requires 15 minutes as a maximum, while the United States Pharmacopæia specifies times varying from 15 minutes to two hours or even longer. It is possible for a tablet to pass the disintegration test of both the British and United States Pharmacopæias by disintegrating to granules which pass the 10 mesh wire sieve specified, while the granules themselves may disintegrate only slowly with consequent slow release of the medicament.

Hydrophobic lubricants such as magnesium stearate or talc delay disintegration and though often more effective than starch the use of the latter has the advantage that it assists, rather than

impedes, disintegration.

The disintegration time of tablets may change on storage; usually to lengthen though occasionally it becomes shorter. Compression at the time of manufacture is of importance; excessive compression leading directly to increase in disintegration time.

More immediate onset of action usually follows parenteral injection, particularly by the intravenous route. This may involve no change in the drug itself as with vitamins B₁ and C, a number of alkaloids and other substances normally administered orally. Slight change in the chemical nature can frequently render suitable for injection drugs which orally are given in an insoluble form.

Cored Tablets

An early attempt to prolong drug action in oral preparations involved the ingestion of two tablets or capsules simultaneously one of which had received a coating intended to delay availability of the drug for some hours. That was quickly simplified by preparing a tablet made up of a core, containing one dose, coated with a delaying layer, with a layer containing an initial dose on the outside. This does not provide the continuous slow release of medicament which is desired and is no better, but only more convenient, than taking two tablets at an interval of time.

A considerable advance was the use of a large number of small pellets coated with varying thicknesses of a coat intended to delay the release of the drug, some pellets being left uncoated to provide the initial dose, the mixed pellets being supplied in hard gelatin

capsules.

Tablets have been prepared either from a mixed granulate, part of which has been treated to retard disintegration or from coated pellets using a wax or fatty base to prevent damage to the protective coating on compression, but scoring or deformity of the coating may occur during tableting causing variation in the rate of release of the drug.

A water-insoluble drug may be prepared as a suspension either using material of large particle size, or after adsorption to an ion-exchange resin or protein. The drug may also be suspended in a water-in-oil emulsion, or coated with substances insoluble in the gastric juice. Methods of preparation are quoted by Lazarus and Cooper.

Use of Ion-exchange Resins

The most fully exploited chemical method to obtain slow release in oral preparations involves combination of an acidic or alkaline drug with an ionexchange resin. Alkaline drugs combined with cation exchangers of the sulphuric acid type to give a resinate release the drug as the hydrochloride in both stomach and intestine and since elution is dependent only upon ion concentration which does not vary widely in the digestive juices the release rate is fairly constant. A more regular rate of elution is obtained if incompletely converted resin, or a mixture of the resinate with the hydrogen form, is used, since this depresses the initial release rate. Acidic drugs combined with an anion-exchanger release the drug in the acidic form in the stomach, and as the sodium salt in the intestine, but have not yet been widely used.

Other chemical methods which have been employed for obtaining prolonged action in oral preparations involve either change in the chemical nature of the drug itself or use of derivatives.

In certain cases the action of drugs given orally can be prolonged by simultaneous administration of a substance 'which competes with them for excretion by the renal tubules, Caronamide, sodium benzoate and probenecid have been used for this purpose.

A number of substances are now under clinical investigation which delay or inhibit drug metabolism. Of these, aminoethyldiphenyl-propyl acetate and 2:4-dichloro-6-phenylphenyloxy - ethyldiethylamine have been claimed greatly to prolong the action of phenytoin and methoin, morphine and pethidine, and amphetamine.

The methods which have been employed to increase the duration of activity of parenteral preparations include: physiological modification of absorption or excretion; modification of the solvent; chemical modification of the drug; adsorption of the drug; the use of suspensions, and implantation pellets.

When a drug is soluble both in water and in an oily vehicle, as, for instance, with estrone in low concentration, the oily solution is significantly more long acting than the aqueous one. For watersoluble drugs, the addition of gelatine, carboxymethyl cellulose and polyvinylpyrrolidone to the aqueous injection has been claimed to increase the duration of activity of some and to be ineffective with others and the use of carboxymethyl cellulose and polyvinylpyrroli-done is declining following warnings that they may be carcinogenic in the high concentrations required. Dextran which is claimed to be non-carcinogenic has been suggested as an alternative.

Chemical Modification

Chemical modification is directed to either the production of insolubility or delay in utilisation. The former is well exemplified by penicillin and insulin.

Chemical modification of the steroid hormones has not been directed towards the production of insolubility since this group is without exception insoluble in water at a therapeutic dosage level, but has been concerned with delaying metabolism to an active molecule. Esterification of one or more of the free hydroxyl groups in the steroid molecule by an organic acid is the method usually adopted.



FROM THE REPUBLIC OF IRELAND: Strong support for the Conference is always forthcoming from the Pharmaceutical Society of Ireland, and many members, including the president and secretary, made the crossing this year.



NORTHERN IRELANDERS ALL: With the president and secretary of the Pharmaceutical Society of Northern Ireland are colleagues who flew from Belfast for the Conference with compatriots now resident in England.

In general, esterification with a long chain fatty acid produces the greatest prolongation of activity, which increases to a maximum with an optimum chain length of the acid. The results of some unpublished work carried out in our own laboratories on a series of esters, varying in chain length from C6 to C12 suggests that Co (pelargonate) or C10 (decanoate) is the optimum for this series. The initial delay in response characteristic of most long-acting preparations is also seen and demonstrates that if a uniform level of a cavity with rapid onset is to be obtained a mixture of esters such as the propionate, phenylpropionate and decanoate should be used, rather than the long-acting decanoate alone. These esters become more soluble in oil with increase in chain length of the esterifying acid, enabling the larger doses required to be given in a small dose-volume.

Adsorption on to a Carrier

Adsorption of a drug on to an insoluble carrier has been used as a means of prolonging the activity of toxins and toxoids, and is of considerable importance as one method of delaying the utilisation of the protein hormone, corticotrophin. The carrier is usually the hydroxide or phosphate of either aluminium or zinc, adsorption occurring only when these substances are in a colloidal form.

Crystal suspensions of steroid hormones are not as long acting as might at first be considered probable. A crystal suspension of testosterone propionate is intermediate in duration of effect between the oil solution and an implantation pellet and while pharmacological work has shown that both duration and response is about doubled when the crystal suspension is compared with the oil solution of this steroid ester, the response to the crystal suspension declines rapidly. The duration of action of such crystal suspensions varies directly with the size of the crystals, but a limit must be im-

posed since pain on injection increases with increasing crystal size.

Implants are manufactured either by compression of the pure sterile material, or by melting and casting it into shape in a mould. The former method is of universal application, but the latter is restricted to hormones with a melting point below about 200°C., since those with a higher melting point discolour or char on melting, and is not satisfactory for the stilbæstrol series of synthetic æstrogens which fall to powder after solidification. Little difference has been noted clinically in the effect of implants prepared by either method though it is claimed that the process of fusion leads to a more uniform product than can be obtained by the compression process.

The mobilisation of the hormone is limited by the rate of solubility in the body fluid rather than by the final solubility of the substance. The absorption rate from superficial areas can be expressed mathematically as a hyperbolic curve which reflects the decreasing surface area of the implant during absorption and we have found that if the average daily absorption is related to the original surface area, fair agreement is seen.

The Implant Method

This consideration is of importance in controlling, not only the daily dosage but also the duration of activity. Increased dosage rate can be achieved most accurately by increasing the number of implants inserted at one time, whereas an increase in the weight of material implanted as a single pellet, while it leads to some increase in daily dosage, is of greater importance in determining the time during which the implant continues to exert its therapeutic effect.

Discussion

DR, G. F. SOMERS, Liverpool, opened the discussion by declaring that some drugs had too long an action, which it

was often difficult and sometimes impossible to terminate. For example, one
could not "switch on and switch off"
the action of decamethonium. On the
other hand neostigmine could control
the effects of curare.

Many anticoagulant drugs were of the long-acting type and clinical control was therefore often difficult. It was often easier to give a drug that had a short duration of effect and repeat the dose if necessary.

Dr. Somers believed that the method would probably result in fewer allergic patients.

MR. S. G. E. STEVENS, Welwyn Garden City, referred to the present work in the United States on the control and testing of drugs and the difficulty of simulating the conditions in the body. He suggested that the doctors should "tell us how to relate the chemical systems with clinical effect." Regarding the criticism of long-acting drugs he personally objected to being awakened at 3 a m. to be given a sleeping drugshed.

at 3 a.m. to be given a sleeping draught. MR. E. M. BAVIN, Welwyn Garden City, asked if it was better to attain peak levels of drugs by using repetitive doses that might increase side-reactions, or to use drugs of prolonged duration that gave rise to lower than peak levels in the blood but reduced side-effects. He considered that more work should be done on modifying drugs to delay their metabolic breakdown.

MR. CHAMNOS asked if the taking of medicines had been related to our eating habits and referred to the problem of getting trials done on sublingual therapy. He pointed out the extended use of suppositories on the Continent, he thought the rationale appeared to be sound and should be the subject of more investigation.

MR. G. J. HENDRA, Truro, spoke of the difficulty of explaining to patients such changes in official formulations as that of glyceryl trinitrate tablets. He suggested that the widest publicity should be given beforehand to such changes.

Satisfying the Patient

Mr. R. L. STEPHENS, Havant, mentioned that the improved formula of glyceryl trinitrate had first been suggested at a Conference meeting. There had been a considerable delay before its adoption, and in the meantime one manufacturer had taken up the formula; colouring and flavouring his product to resemble the former official one. There had been no complaint of ineffectiveness from patients. He had investigated in Philadelphia, U.S.A., the source of suggestion that polyvinylpyrrolidone in preparations was carcinogenic. One method of slowing down absorption was by rendering a soluble compound less soluble. It was useful in providing short delays in products apt to cause trouble with side-effects from their rapid action. He asked if Dr. Edkins had applied the sintering process to implant manufac-

Replying on points raised at that stage Professor Wilson said the inherent difficulty in postulating a "standard stomach" was that there was no standard patient. A more rewarding study might be sublingual absorption: the route enabled an excess of drug to



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be spat out. He did not see why trials should present difficulties. Everybody had a tongue and when a dose had been taken its effect could be observed. Blood levels were at best an indirect measurement. The relative desirability of peak or constant-level dosages was a matter for trial. It might seem a more attractive hypothesis to administer a few hard punches, but such ideas had still to be proved. He was himself surprised that not more work had been done on delayed metabolism. On the question of frequency of administra-tion, drugs unlike foods had not to be considered in relation to storage in the body. He agreed that administration through the rectal membrane was effective, but thought the practice would not be easy to popularise in Britain. One current use, however, was in the rectal administration of hyoscine.

In his reply, Dr. EDKINS thanked Mr. Stephens for the information he had given about the dubious origin of the much-publicised criticisms of PVP as being carcinogenic. They had had unfortunate repercussions in obstructing the introduction of new products in America. In preparing implants he had not tried sintering because it would probably produce a porous product, which might cause delay in effect through the deposit of protein matter

in the pores.

DR. K. R. CAPPER, speaking on the British National Formulary's adoption of a new formulation for glyceryl trinitrate tablets, said the B.N.F. change had followed a similar change in the British Pharmacopæia. He could speculate on the reason: the chocolate-coated tablets were unstable. The B.P. could have added a brown dye; it might have misled some, but not always those who had to take the tablets repeatedly. He thought Mr. Hendra could have enhanced his local reputation by quoting to customers and prescribers the statement issued to explain the change. He found it difficult to believe that glyceryl trinitrate was a placebo, or that what-ever the psychological reaction of the patient, it was without action.

Coatings that Cause Trouble

MR. H. S. GRAINGER, London, said the problems of enteric coating had been impressed upon him recently when, during a radiological examination of a patient, thirty-six entericcoated tablets that had not disintegrated were observed in the intestinal tract. During an experiment prompted by that experience volunteers had been given three ½-gm. sodium chloride enteric-coated tablets at 10 p.m. The dose had been repeated at 8 a.m., followed by an x-ray investigation at noon. The products of four different manufacturers had been used, and six tablets had been seen in the x-ray photographs of most of the subjects-three in the colon and three in the duodenum.

DR, N. J. HARPER, London, thought that, in the problems of pharmaceutical formulation, the medical chemist could do much more to help his colleagues in developing studies within the field

ot drug potentiation.
DR. T. D. WHITTET, London, reported that an intramuscular injection of aminophylline containing a local anæsthetic had proved satisfactory, and a preparation of oxytocin for sublingual administration had been of value, although at times the rate of absorption had been unpredictable. He also stressed that in tablets the breakdown of the granules was just as important as the disintegration of the tablets.

MR. H. J. BRAGG, Sandwich, considered that many substances were unsuitable for use as long-acting drugs, and that the B.P. test for the disintegration of enteric-coated tablets was not satisfactory; it needed modification. In order to ensure satisfactory tablet products it was necessary to check the particle size of tablet granulates.

PROFESSOR WILSON said he was interested in the injectable preparation of aminophylline referred to by Dr. Whittet but wanted to know if the "residual muscle" was in a healthy state. Sublingual administration of oxytocin, new to him, was of extreme interest.

DR. EDKINS said the sublingual route was only one of several. He referred to the use of vasopressin snuff in the treat-

ment of diabetus insipidus.

MR. J. W. HADGRAFT, London, commented on the influence on the absorption of drugs by the gastrointestinal tract of the pH of the surrounding media. He wondered if it might be possible to influence absorption of sublingual preparations by incorporating suitable buffers. Alterations in pH might also be of some significance in rectal administration.

No "Standard Stomach"

DR. G. E. FOSTER, Dartford, reemphasised the "difficulty of getting a standard stomach" and cited the different results obtained in different parts of the world with the same formulation of enteric-coated tablets. In one territory the products were satisfactory; in another they passed through the intestine intact. It was therefore difficult to design suitable tests. asked if excipients should be added to compressed implantation products.

DR. A. H. BECKETT said that if delayed or sustained-release drugs were desirable the question to be asked was Are the compounds already available really achieving the sustained release? He thought the evidence seemed to be that the manufacturers were achieving

their object.

Dr. J. Kulcsar-Gergely, Debrecen, Hungary, said that in any attempt to prolong the action of drugs consideration should be given to their effect on those organs concerned with the metabolism or elimination of the drug. The prolonged action of a drug might exhaust or damage the kidneys or liver. The natural production of hormones in the body might be suppressed, and that might be important.

MR. H. D. C. RAPSON, Betchworth, wished consideration to be given to the mathematical implications of the rise and fall of blood levels. It was necessary to consider the mode and type of action before deciding whether the quick or sustained-release materials should be used.

DR. DAVID TRAIN, London, in a mathematical approach pointed out the unit quantities involved "before you can guarantee that the mixture does

contain an active material that is evenly distributed.

In his winding-up remarks as intro-ducer, Professor Wilson dealt first with Dr. Beckett's question about trusting published evidence. He said he accepted the written word where the work described seemed based on reliable methods. On the particular subject under discussion the published evidence seemed to show promise but not arrival. The apparent ineffectiveness of tablet products on some occasions might, he thought, be explicable on the basis of Dr Train's remarks.

Snags with "Buffers"

DR. EDKINS, the other opener, concluded the session by saying that he had done some work on buffers to reduce pH in the buccal cavity, but the difficulty was that, to change the pH there, the quantity of agent needed was disproportionately high. It introduced an objectionable taste and brought about a quantity of electrolyte on one spot that might cause irritation in the mouth. He was against additions to implants, which could fundamentally alter absorption rates, usually in the undesirable direction of slowing them. best manufacturers, he maintained, were conversant with the problem posed by Dr. Train.

CONFERENCE ITEMS

Hospital Pharmacists' Evening

For hospital pharmacists and their friends, a memorable high spot among social functions of the Conference was the cocktail party offered by the Wessex Branch of the Guild of Public Pharmacists at the Suncliffe Hotel on Wednesday. The president of the Society and the chairman of the Conference were among the guests, modestly claiming admission as the father and the husband respectively of hospital pharmacists! During the evening the company enjoyed a mystifying exhibition of conjuring, and Mr. J. R. Philips (Conference local treasurer) delivered an outstanding lecture on stuttology with skilful demonstrations, which proved to be more appropriate to such a convivial evening than to the science sessions.

Afternoon Tea

Many of the women pharmacists present at the Conference attended a meeting for afternoon tea on September 24 at the invitation of the National Association of Women Pharmacists.

Communion Service

An early morning Communion Service at the Punshon Memorial Methodist Church aroused the interest of many besides Methodists by reason of the architectural controversy its designer had encountered in getting his plans through. Eventually he secured national approval for the "outstanding merit" of his building.

Future Conferences

The British Pharmaceutical Conference Executive has provisionally accepted invitations to visit Portsmouth in 1961, Liverpool in 1962 and London in 1963.

CONFERENCE SCIENCE

Papers read and discussed at Bournemouth, September 21-25

Continued from C. & D., October 3, p. 278.

First paper taken at the Tuesday morning (undivided) science session was read by Mr. D. J. Drain. Its title was:—

Esters of 4-Aminosalicylic Acid

D. J. DRAIN, R. LAZARE, G. A. POULTER, K. TATTERSALL and ALICJA URBANSKA THE paper describes the methods adopted to examine a series of alkyl and aryl esters of 4-aminosalicylic acid (PAS) for protective effect in mice infected with *Mycobacterium tuberculosis H73Rv*, and the PAS blood levels after oral administration to mice, rats and rabbits.

Examination of the results of mouse survival tests together with those of the chemically determined PAS blood levels showed some surprising features. Aryl esters of PAS gave low PAS blood levels yet many showed a marked protective effect on infected mice. Alkyl esters (ethyl and β -hydroxyethyl) gave high PAS blood levels, but gave less protection. From the data reported in the paper, p-tolyl PAS is shown to be of low toxicity, only minor toxic symptoms appearing after a dose of 1560 mgm./kilo daily for three months in rats. That, together with the fact that it is tasteless and produces sustained PAS blood levels approaching those achieved with equivalent doses of sodium PAS, indicated that the substance fulfils many of the criteria for a clinically acceptable PAS derivative. (From Smith & Nephew Research, Ltd.)

Discussion

MR. TREVES BROWN, from the chair, said that the surprising result seemed to him to be the low blood levels and relatively high protection of the aryl esters and the high levels and low protection of the alkyl, which he found difficult to explain on a toxicity basis.

MR. DRAIN said that the findings were not merely the result of the authors' own workings. They had been confirmed by many investigators. Widely differing amounts had been used, and the tolerated dose was seen to be extremely low.

DR. T. D. WHITTET, London, asked whether the compounds were not completely insoluble, and had any attempt been made to control particle size, which had recently been shown to have marked influence on absorption and blood levels. MR. DRAIN replied that the authors were closely aware of the importance of particle size. They had attempted to prepare all the compounds by a standardised procedure. Recently they had made some tests on reducing particle size, with resulting more rapid absorption and higher levels.

DR. BROWNLEE, London, asked whether the authors could give results of any microbiological tests. The reply was that they had assayed PAS in the blood and found discrepancies in the results by microbiological and by

chemical methods. Present chemical methods were not specific and would identify metabolites as well as PAS. Accurate determination by microbiological methods was difficult, but the discrepancies were too large to be explained by errors in technique. The authors had devised a new chemical method which showed promise of giving results in agreement with the microbiological assays.

MR. H. S. GRAINGER, London, said that if the PAS esters came into use the clinicians would probably want to control dosages by watching blood levels. Would the author agree that they were not a good guide? He next asked whether there was any evidence of preferential concentrations in different tissues. Alternative presentations were often called for of such drugs as PAS, for example suspensions. Was information available about hydrolysis rates?

MR. DRAIN said that with PAS itself blood levels could be a good guide for dosages, but for their esters the necessary blood levels had not yet been determined. It had been shown that they became hydrolysed in the body, with no measurable residues of the esters. The paper gave indications of different concentrations in different tissues. He had no information on hydrolysis rates but it was proposed to carry out stability experiments.

DR. BECKETT said the paper was another example of the new approach to formulation. The alteration of spectrum activity was not a fully exploited approach but there were now ten to fifteen examples. Histologists were doing excellent work in mapping enzyme concentrations, and in the United States there was a clear idea of the factors involved in the release of compounds under enzyme attack. In compounds active in animals but inactive in man it was found that ester protection might give the desired activity. The difference of effect between the aryl and alkyl compounds of PAS might be due to a different position of release. In his reply Mr. Drain said he was unable to comment but the suggestions were of great interest and would be looked into.

MR. K. A. LEES, London, said the impression seemed to be given that the esters were absorbed into the blood stream but the paper did not prove it so. Was it not possible that the action took place in the gut? The reply was that the authors had not assumed that esters were absorbed as such into the blood stream. Tests on the gut had shown the esters there in quantity but that did not disprove PAS absorption from the gut. It was likely that some hydrolysis took place in the gut but the matter had not yet been tested.

DR. F. L. ROSE, Alderley Park, said

DR. F. L. ROSE, Alderley Park, said the substances of the paper were sparingly soluble in water but soluble in lipoid solvents. Could there not be a concentration in fatty parts of the body? Mr. Drain agreed about the possibility but said no estimations had been carried out.

MR. R. H. SUTARIA, Bombay, asked whether, by the use of viscous media, it would be possible to produce an oral presentation with a half-life of two weeks. The reply was that the particles could quite well be coated with a retarding substance, but the result would be low PAS blood levels and excessive doses.

The second paper in this session was

Assay of Anti-haemophilic Globulin

R. MAXWELL SAVAGE

THE Biggs, Eveling and Richards assay of anti-haemophilic globulin is examined and some modifications are discussed. The statistical design and analysis is offered in a simple form suitable for routine application. The relationships of some defects in the assay to the property of the phospholipid are discussed. It is shown that the method is satisfactory if certain precautions are taken, and if the interpretation is carried out objectively by mathematical methods. Modified assays are described, one of which could probably be used in cases of serious difficulty with reagents.

(From S. Maw, Son & Sons, Ltd.)

Discussion

DR. L. SAUNDERS, London, asked if any special precautions had been taken to eliminate the lysophosphatide fractions and whether the author had examined preparations made from the egg.

egg.
DR. SAVAGE said that no such precautions had been taken, and he had not tried egg materials. Clinicians usually preferred to use in the comparative tests material of human origin.

DR. FOSTER asked if the assay had been tried in other laboratories and if so with what results?

DR. SAVAGE said the method had been tried elsewhere but the results were far from being consistent.

were far from being consistent.

DR. G. R. MILNE, Glasgow, agreed about the uncertain nature of the assay. In Glasgow they had tried to increase the AHG content by immediately freeze drying after collection.

THE AUTHOR stated that the deterioration of AHG was slowed by temperatures of -70°. He believed the problem of the deterioration of AHG was confused because of the inaccuracies caused by the variations in the plasma.

The next two papers were taken together. They were read by Mr. STEEL.

Antagonism of Antibacterial Action of Mercury Compounds

III. EFFECTS OF CERTAIN SULPHYDRYL COMPOUNDS ON E. coli I

A. M. COOK and K. J. STEEL

Five substances were selected as possible antagonists of the antibacterial

action of mercuric chloride: cysteine hydrochloride, glutathione and thio-glycollic acid (monothiols), dimercaprol (a dithiol) and normal horse serum. The first four substances are more or less pure compounds containing a known proportion of sulphydryl, whilst horse serum is a natural product having a small and presumably variable sulphydryl content. The bacteriostatic activity of the antagonists towards E. coli was determined by both the liquid and solid dilution methods. periments showed that the antagonists were not bacteriostatic to E. coli I in the following concentrations: cysteine, dimercaprol and glutathione, 0.5 per cent.; thioglycollate, 1 per cent.; and horse serum 50 per cent. It is possible that, with the lower concentrations of cysteine and dimercaprol because of their ease of oxidation, it was the bacteriostatic activity of the oxidised form

that was being determined. The possible effects of the proposed antagonists were investigated on this organism by means of two sets of experiments. The first consisted of a comparison of the viable counts obtained on peptone agar medium containing various concentrations of the antagonists; the second was similar but the antagonists were incorporated into the dilution blanks and the counts on plain peptone agar were compared. Incorporation of the antagonists into the medium had little effect upon the number of organisms subsequently growing With the antagonists incorporated into the dilution blanks, the mean count in all dilutions of serum was significantly greater than that obtained using water as the diluent, but there was no significant difference between the counts with the different dilutions. Cysteine and glutathione in concentrations up to 0.25 per cent. appear to have little effect upon the viability of E. coli I. The use of a 0.25 per cent. thioglycollate solution as the diluent resulted in a significant reduction in viability. Prolonged contact with 0.1 per cent. or more of thioglycollate causes a reduction in the number of viable cells, and those still viable multiply more slowly than usual.

Dimercaprol in concentrations above 0'1 per cent. causes a marked reduction in the viable count of the organism, and this reduction was even more pronounced in the case of those dilutions not plated immediately. High concentrations probably exert their effect by retarding the metabolic processes.

In all cases the aqueous controls showed reduced viability if not plated immediately.

From these experiments the following concentrations of the proposed antagonists appear to be suitable for quantitative work involving viable counts of *E. coli I*:

Normal horse serum up to 20 per cent.

Cysteine up to 0·25 per cent.
(about 15 mM)

Glutathione up to 0·25 per cent.
(about 8 mM)

Thioglycollate up to 0·1 per cent.
(about 10 mM)

Dimercaprol up to 0·05 per cent.
(about 5 mM)

IV. QUALITATIVE ASPECTS OF ANTAGON-ISM OF ANTIBACTERIAL ACTION OF MERCURIC CHLORIDE

A. M. COOK and K. J. STEEL

THE stoichiometric relations between mercuric chloride and the sulphydryl antagonists have been examined. antagonists nave been examined. In liquid cultures cysteine, glutathione, dimercaprol and thioglycollate are effective as inactivators of mercuric chloride in quantities close to the theoretical amounts. When used to recells. vive mercuric-chloride-treated larger amounts are needed, and horse serum is ineffective. The results obtained with E. coli I suggest it is not so resistant to the action of mercuric chloride over long periods as are Grampositive organisms. Cells treated with mercuric chloride in the presence of a nutrient medium derive some protection from the constituents of the medium. Qualitative experiments show dimercaprol to be the most efficient antagonist and thioglycollate the least. (From the Department of Pharmaceutics, School of Pharmacy, University of London)

Discussion

DR. SOMERS asked if the authors had done any tests with penicillamine. The reply was that they had considered it but "didn't like playing around" with such a compound.

MR. G. SYKES, Nottingham, said that the treatment of antagonists on a quantitative basis was an interesting development. In terms of mercurial compounds there was an exact numerical relationship with the "antidote." The paper raised once more the vexed question what was a "dead" organism? The authors' reply to that question was that if no culture could be obtained from the dry phial the organism was regarded by the National Collection as dead.

DR. A. E. ROBINSON, London, commented on parallels with her own work on metal ions. She thought that the mercury, like the metal ions of her own work, could be bound by the organism. The effect of the thio compound would depend on time of contact. The reply of Mr. STEEL was that the longer the organism was in contact with the mercury compound, the longer the time taken for revival. The main outcome of the tests was to gain a pointer to the different mode of action of thioglycollate and glutathione, with cysteine in an intermediary position.

The next paper was:-

Factors Affecting Inactivation of Quaternary Ammonium Compounds on Agar

M. J. GROVES and H. A. TURNER

PHARMACEUTICAL preparations for topical use containing antibacterial quaternary ammonium compounds have been reported to show reduced in-vitro activity when tested by the seeded agar plate method. The adsorption of an nomologous series of alkyltrimethylammonium bromides by granular agar was examined. Preliminary work showed that the particle size of the granules made no significant difference

to the amount of quaternary ammonium compound adsorbed or to the time required to reach equilibrium. For each of the four homologues there was seen to be a point on the isotherm above wnich the adsorption process ceases. This point appears to correspond to the critical micelle concentration for any one of the quaternary ammonium homologues. In further tests a number of quaternary ammonium compounds were investigated using a method based on the seeded agar well-plate method. After incubation the zones of inhibition were measured and the results plotted as a function of the concentration. Results indicate that the "critical" concentration of any quaternary ammonium compound on an agar plate is about the same as the bacteriostatic concentration in liquid media. addition of 10⁻⁴ mole sky blue FF to 1 per cent. agar gel enables the detection of micelle aggregates within the gel. It is concluded that the inactivation of antibacterial quaternary ammonium compounds by agar is not sufficient to preclude the investigation of preparations containing those compounds by the conventional seeded agar plate methods.

(From the Department of Pharmacy, University of Nottingham)

Discussion

MR. SYKES said that if the assessment of mercurials was difficult, that of quaternary compounds was "almost beyond consideration." The literature provided many examples of differences of interpretation. One example was that the lethal concentration of cetrimide was three to six times greater when 0.2 per cent. of agar was added. That was a lethal matter. The authors were dealing with inhibition rates.—The reader of the paper said he agreed that there were disagreements on bactericidal activity, but there was in the literature a greater measure of agreement over bacteriostats.

DR. SAUNDERS, London, asked what range of particle sizes had led to the conclusion that equilibrium time was independent of particle size. Secondly, were the authors quite happy that their indicator was indicating the effects of phenomena within the gel and not effects of the gel itself. The reply was that powders through various meshes had been tried for varying times and no significant differences had been found. From the findings of other workers he was content to assume that the indicator was operating on the micelle.

MR. I. RAPSON, Betchworth, asked if the "amount" of homologue was in terms of molar quantities or "mass." He suggested that adsorption on the agar must be indirectly affecting the diffusion rate, and that a temperature-dependent factor was being introduced. There were methods (e.g., conductivity) by which the indicator could be checked.

The reply was that the authors were acutely aware of the difficulties of obtaining reproducibility. It had taken them a long time to devise a good enough technique for the work described in the paper.



The chairman (Mr. H. Treves Brown) and president of the Conference (Mr. G. Hughes) take the floor with their wives.

DR. ANDERSON read the next paper:— Comparative Protective Effects of Degraded Carrageenin and Aluminium Hydroxide on Peptic Ulceration

W. ANDERSON and J. WATT

THE paper describes a method for producing duodenal ulcers in the guinea pig. The effects of a sulphated polysaccharide are compared with those of an antacid in protecting the guinea pigs against duodenal ulceration. The authors tentatively conclude that the complex formed between mucoprotein in the mucus lining the stomach and degraded carrageenin serves to enhance the physical protection afforded by mucin. The degraded carrageenin also confers anti-peptic properties on that complex.

(From the Evans Medical Research Laboratories, Speke, Liverpool, and Department of Pathology, University of Liverpool)

Answering points raised by THE CHAIRMAN, Dr. ANDERSON agreed that the term peptic ulceration was used irrespective of the site of the ulceration. The authors had found that conditions in the duodenum were just as favourable to formation of the complex. To DR SOMERS, Liverpool, he said he had compared the results in other animals and, since the main use of the preparation was in the treatment of established ulcers, to what extent had the authors carried out a study of healing that type of ulcer. He also considered it inadequate to describe the pathological damage as lesions.

Dr. Anderson replied that the material had been used in other types of ulcers and under certain conditions it had been shown to give satisfactory results.

DR. J. WATT, a co-author of the paper, explained that it was often difficult to assess the amount of damage involved in experimentally produced ulcers, but their technique was to use microscopic methods.

DR. BROWNLEE, referring to the table in the paper, pointed out the "astounding capacity" of aluminium hydroxide to protect the duodenum.

(To be continued)

BRANCH EVENTS

HULL

President's Reception

The president of Hull Chemists' Association (Mr. J. E. Hindle) and Mrs. Hindle welcomed guests at the president's reception held in Hull, on October 1. The reception took the form of a dinner, followed by a programme of entertainment. The Association's prize for the best pharmacy student of the year at Hull College of Technology was presented to Miss Elizabeth Broughton. The prize for the best student in the intermediate pharmacy class was won by Mr. R. C. Hall.

DUDLEY AND STOURBRIDGE A Posthumous Gift

MEMBERS of Dudley and Stourbridge Branch of the Pharmaceutical Society heard a warm tribute to the late Miss Sarah Wasdell (last year's chairman) at

their annual dinner and dance at Dudley, on October 1. It was announced that shortly before her death Miss Wasdell expressed a wish to provide a permanent memento of her chairman-ship: an engraved George II brass mortar and pestle which was presented at the dinner for the use of future chairmen. Mr. F. H. Haden (Branch chairman) presided and the biggest attendance for some years (200), included Dr. G. T. Newton (chairman, Dudley, Division, British, Medical Dudley Division, British Medical Association), Mr. A. Moseley (president, Birmingham Pharmaceutical Association), Mr. H. Jones (chairman, Wolverhampton Branch), Mr. W. H. Reeve (chairman, Walsall Branch), Miss Mary White (vice-chairman, Dudley and Stourbridge Branch). Mr. J. Powell (social secretary) paid a tribute to the late Miss Wasdell and Mr. Kenneth Bloomer, both of whom had died since the last annual function. Bloomer served as a member of the committee for some years, also served on the social committee and was toastmaster at the annual dinner on a number of occasions. His contributions to their deliberations were always most useful and any criticism he had to make was always constructive. No words could do justice or be a suffici-ent tribute to Miss Wasdell's wonderful courage in the face of adversity. The impressions her personality made upon all who came in contact with her were the footprints by which she would always be remembered. She was immediate past-chairman, and had been a member of the committee from the time the Branch was formed. She was one of the prime movers in the formation of the ladies' section and she became their founder chairman. They were much the poorer for her passing and would miss the wisdom of her counsel based as it was upon nearly fifty years' experience in pharmacy.
Some four months ago Miss Wasdell expressed a desire to present to the Branch some memento of her term of office as chairman. After some discussion as to the form that should take, she commissioned him to obtain a George II brass mortar and pestle and to have it suitably engraved. He was able to carry out her request and was able to take the engraved mortar and pestle to her, for approval, a short time before she died. She was very pleased with it and, in what proved to be her last request, she honoured him by asking him on her behalf, to present the mortar and pestle to the chairman, to be used each year on that occasion and to remain in the possession of succeeding chairmen, year by year. Mr. HADEN, accepting the gift, said that the chairman of the branch should have something other than the official chain of office to show that he or she held the office and was proud to do so. He suggested that, subject to the approval of the committee the symbol of the chairman's office should be known as the Sarah Wasdell memorial. Proposing the toast of "our guests" Mr. Haden welcomed Dr. G. T. Newton and said the doctor-pharmacist cooperation in that area was one of such high standard that the patient could not fail to benefit. DR. NEWTON re-sponded on behalf of the guests.



For Retailer, Wholesaler and Manufacturer
ESTABLISHED 1859

Published weekly at
28 Essex Street, Strand, London, W.C.2
TELEGRAMS: "CHEMICUS ESTRAND, LONDON"

TELEPHONE CENTRAL 6565

And Not Only Doctors

CRITICISM of the powers of Executive Councils of the National Health Service in the disciplining of doctors is to be found in the editorial columns of the Medical Press of September 30. After giving details of a case in which a doctor was fined £52 10s. for a "breach of his terms of service," the periodical points out that, in a court of law, in order to arrive at an adverse verdict . . . and inflict punishment it would be necessary to show beyond reasonable doubt that the patient had suffered as a result of the doctor's action. . . . There is no evidence . . . that that patient suffered at all. Referring to the penalty imposed, the Medical Press states: "It is in fact a good deal more than is commonly exacted for felonies . . . the power to recommend such penalties ... may seem considerable, especially for a body which is not governed by rules of evidence."

In so many cases in which a doctor is made the target of litigation it is a case of "heads I win, tails you lose." The editorial continues: "Anybody is entitled to bring before an Executive Council an allegation of any sort against a doctor and no matter how frivolous or scandalous or malicious, or even unfounded that allegation may prove to be, the person who has made it is entitled to walk away scot-free even though he may have perjured himself a dozen times over."

Whilst we sympathise with our colleagues, we must point out that if a malicious attack is made there is a remedy in the Courts. We have equal sympathy with the general practitioner who, by his terms of service, is obliged to go on demand to any emergency, "real or imaginary, and irrespective of whether it concerns one of his patients, or his partner's, or his rival's, or indeed some visitor from the ends of the earth." The editorial asks: "What other body of men in this country today would submit to such conditions, and on what trade union would any Minister attempt to impose such terms?"

We suggest that the medical practitioner is not the only professional man who is treated in this way. Pharmacists are expected to provide similar services, and they too are subject to the discipline of an Executive Council, to the Statutory Committee of the Pharmaceutical Society, and to the edicts of its Council. We agree that the Minister would be well advised to look at the Executive Councils, their constitution and practice.

The Medical Press adds that, in the reports of those bodies, the medical profession is "subject to a spate of denigration" and expresses the doubt whether that increases "esteem for the National Health Service" or will "promote goodwill between the doctors and their employers and strengthen the *esprit de corps* of the Service as a whole."

Similar reactions are aroused in pharmacists when they discuss their problems in the National Health Service. The medical practitioner is certainly not alone, and, like the consultant and general medical practitioner, hospital pharmacists still anxiously await the revision of their salary scales.

Multiple Dilemma

In the recent Conference debate on the advertising of medicines Mr. J. C. Hanbury confessed that the whole problem was one to which he could find no solution.

In our view more than one dilemma is involved, making the issues extremely confused. Perhaps some of the problems may more easily be solved by separating out what applies to advertising in general from what applies exclusively to the advertising of medicines. The problems that remain may still have no permanent solution, but may be amenable to a compromise acceptable until further scientific advance dictates a new approach.

Advertising as such is linked with, and may be inseparable from, mass methods of manufacture. If it is an advantageous and right thing that medicines should be factory-made in large quantities (and few today would argue otherwise) then it is necessary to accept the machinery—including advertising—by which they are introduced to (a) the prescriber or (b) the user. It is also necessary to accept that the costs of advertising must be taken care of in the price of the article. Any social problems caused by advertising must be dealt with by society as a whole, which must hold the balance between varied and often conflicting interests.

Since, as Dr. Wrigley pointed out, it is usually necessary to penetrate a barrier of unreceptiveness in the consumer, it follows that something in the nature of shock, novelty or blandishment must be allowed to the advertiser.

We may well accept, as Mr. Fitch accepted, that medicines in the advertised range are today subject, in the main, to as high a degree of quality control in manufacture as are the medical specialities advertised exclusively to prescribers and pharmacists. Anything wrong in the "patent" medicine field must therefore lie in the advertisements. In the professional session symposium Dr. Wrigley dealt with but a small facet of the problem and Mr. Fitch undoubtedly marshalled many facts and figures. But it was a definite weakness that no paper had been invited giving what might be termed an "opposition" viewpoint, that of "patent" medicine advertisers themselves. No argument can pass as conclusive until all sides have been heard.

At what point does advertising that is a necessary procedure in distribution become objectionable? No doubt at one of several—at that point, for example, where, to ensure that future sales keep pace with past sales, an advertiser could become guilty of persuading healthy people that they are ill, or that his product will cure ailments for which the consensus of informed opinion considers there is no cure, or none from the commodity advertised. Or at that other point where a significant proportion of users may have or may develop an idiosyncrasy or addiction to the drug, and therefore be

by medicating themselves with it. That is the kind of situation that demands consideration and may point to the need for the additional safeguards some people are calling for. The nature of the safeguard, like the social conscience, may fairly be tied to the state of medical knowledge. Some statutory controls have been found necessary in the past, and nobody is likely to argue that they should revert to the provinces of voluntary self-discipline by the manufacturers or the private conscience of retailers. The statutory limitations may be due for overhaul, and even when overhauled will be subject to periodical review and/or revision. But there will always remain large provinces for the other two restrictive elements. The manufacturers' self-discipline may be currently less than some people consider adequate, but it does exist and it is, like professional standards in pharmacy, slowly evolving in an upward direction. Discussions such as

The greatest need for clarification of principles and ideas is perhaps in the sphere of personal responsibility. We are those who think, as we believe most members of the Pharmaceutical Society do, that the time has come to restrict the sale of medicines—all medicines—to pharmacists. If, as Mr. Fitch very tellingly pointed

those we have recently been hearing, can prove of the

greatest value in helping to accelerate that evolution.

out at the professional session, there are enough channels under the National Health Service for the distribution of dispensed medicines, those channels must surely be enough for advertised medicines, and any surplus of distribution outlets would indicate that one of those already mentioned points at which medicine advertising becomes objectionable has been passed.

But we think also that the "all" may have to involve fewer medicines than are on the market today. The purpose is not monopoly of sales to pharmacists, but the greater protection and welfare of the public. It may be disproportionate, as Mr. Hanbury asserted, to talk of "thousands of worthless remedies," but there are some: his own figure was 2 per cent. Pharmacists everywhere recognise that sales of advertised medicines must be refused to particular customers because to take the medicine may delay or prevent medical diagnosis and treatment. There are a few which it is irresponsible to sell to anybody.

To sum up, every pharmacist, being also a citizen, must consider the social problem, theoretical and practical, involved in the advertising of medicines and as a professional man, claiming privileges to which responsibilities are inevitably attached, must in every situation put the welfare of the customer before the sale of the product.

"OPEN SHOP"

AN UNSCRIPTED COMMENTARY ON THE SPECIAL PROBLEMS OF THE PHARMACIST IN RETAIL PRACTICE

E. C. TENNER

The days I spent at the Pharmaceutical Conference at Bournemouth have left me relaxed and impressed: Relaxed by the wonderful warmth of the sunshine and the welcome from the indefatigable members of the local committee; and impressed by the many facets of the Conference itself: the youth and sagacity of the contributors to the science sessions; the useful presence of colleagues from overseas and over Iron Curtain; and particularly our friends from over the Irish Sea. I'm also feeling rather disturbed after attending the symposium session on long-acting drugs and the professional session on advertising of medicines.

While it was heartening to recognise the high ethical standards of the great majority of pharmacists it did become clear to me that there were some pharmacists in manufacturing and some in retail practice too, who were prepared to manufacture, advertise or sell proprietary preparations regarding only the profit to be made thereby and to ignore, if necessary, any particular code of good behaviour not backed by the force of law that might otherwise prevent them. The unity of pharmacy was often impressed on the Conference, and thinking those things over I reminded myself of some words written long ago by Jacob Bell which certainly bear quotation, the italics are mine:

"Political controversies and mercenary disputes are injurious to the interest and character of all parties—that the most effectual method which any class of men can adopt for securing their political rights and advancing their professional standing consists, not in disputation and warm argument, but in a steady and progressing attention to intellectual improvement, and the establishment of such regulations as are calcu-



lated to ensure collective privileges by increasing the amount of individual merit."

Then I remembered that in the early nineteenth century there were certain pharmaceutical retailers of drugs who felt that although there was no legislation on the subject, arsenic ought not to be sold without the taking of certain precautions in the shape of knowledge of the purchaser and signed records of the transaction. In the passage of time the state has recognised poisons and controlled their distribution through authorised sellers of poisons. Pharmaceutical Society founded by Jacob Bell and others played a leading part in that evolutionary progress, but time and pharmacy cannot stand still and the question that disturbs me is "Where do we go from here?" I've often complained that the Council of the Pharmaceutical Society has too often wandered round in circles, but now it has taken a definite leading step by showing the country that pharmacists, the nation's drug experts, were prepared to sacrifice personal profits by refusing to sell, without medical prescriptions, drugs which they believe have a harmful effect on the central nervous system. I am sure that if pharmacists in retail practice continue to stand firm on that decision, the country should eventually realise that legislation was needed to stop the general distribution of those drugs to the public through channels other than pharmaceutical. Already I notice that the addicts are beginning to search the pharmacies for their carbromal and allied drugs, and the pressure is on and will increase. When I look at those people it seems quite patent that most of them ought to be getting their tranquillisers under medical supervision. What I am disturbed about is lest a small minority of

members with anti-social views on manufacturing, advertising, or selling should hinder the progressive work of the Pharmaceutical Society and bring approbrium on the rest of its members

An unrehearsed remark at the Conference specially roused my critical faculties during the debate on the work of local associations, but not enough to drag me to the rostrum. A pharmacist in retail practice made a disparaging comment on the practical ability of graduates in the pharmacy during their "apprenticeship." He should remember that if those graduates did not require careful and patient instruction in practical matters they would not be required to work in a pharmacy for the required period. The youngsters have much to contribute in the way of modern science to their sympathetic pharmacist employers from whom in return they will be eager to learn something of the "art and mystery."

The final Conference session in the pavilion theatre was an excellent opportunity to thank those who were responsible for the excellent arrangements we had enjoyed and to introduce next year's chairman and place of venue, but I'm sure it need not have developed into the marathon of back patting we had to endure for politeness' sake. Some of

those in the back row of the platform, out of the limelight, looked extremely bored.

Of course, after the Conference I came back to earth with a bump, to try and work out who sells what, now in the "Beecham Empire," at what price and for how long! The great soft drinks war goes on at the retailer's expense as always and it may spread to proprietary medicines at any time. The financial giants are not concerned who sells, or how, as long as the sales are made; retailers can cut each others' throats but the manufacturer is alright Jack! He always gets his price.

Perhaps that is why I felt disturbed at the Conference signs that some wild pharmacist manufacturers might like to try and run pharmacy to suit themselves and their proprietary medicines. We all know what a strong concerted effort there has been lately to interfere with the traditional methods of labelling patients' medicines; the proposals would react only to the advantage of manufacturers, by increasing the public's opportunities to learn about questionable self-medication, to the detriment of the profession of pharmacy. The attack on our traditions and principles could easily be mounted from other directions too so we must be vigilant.

ON SELLING HOT-WATER BOTTLES

An extra fillip for a product that almost sells itself

IAN JONES

(chairman, British Rubber Hot-water Bottle Manufacturers' Association)

WO mild winters and the hottest summer in recent memory have brought the sale of hot-water bottles for the moment to a low ebb. But it is just such vagaries of the British climate that in the long run provide the basis for the lasting popularity of the hot-water bottle in this country; and it will need only a night or two of sharp and sudden frost to send the public hurrying to the nearest chemist to renew the family stock of its cheapest and most comforting luxury.

In a sense, therefore, hot-water bottles may be said to sell themselves, and there might seem to be little that the individual retailer need do but watch the thermometer and prepare for the rush. After all, rubber hot-water bottles are well over 100 years old. They have no longer any novelty value, and they exert a minimum of snob appeal. You cannot induce Mrs. Smith to trade in her old No. 2 model merely because the Jones's have bought a new one 9-in. wide, Italian styled, with a picture of Eisenhower on one side and Balmoral on the back.

Even in the sharpest autumn, however, a merely passive attitude would be a mistake. For all its familiarity, there is still a great deal that people do not know—or at least do not realise—about the modern hot-water bottle; and a good salesman can do much to interest his customers and increase his turnover.

Functionally the important things about a hot-water bottle are size, ease of filling, comfort, and durability. For practical purposes a fairly strict limit is set to size by the capacity of the household kettle. An average kettle holds 3 pints. More than ½ gall, is rare; and perhaps rarer still is the citizen willing to boil two kettles to fill one hot-water bottle, or to stagger upstairs with it after he—or she—has done so. At the other end of the scale, too small a bottle gets cold too soon; and though miniature bottles are sold for babies' cots, most adults want at least a quart of hot water to see them through the night.

How Hot for How Long?

A great deal of nonsense is talked about bottles that stay hot longer than others. The length of time a bottle remains hot depends on the amount and temperature of the water put into it, and the rate at which it loses heat to its surroundings—that is, the bed and its occupant. That rate in turn depends on the initial temperature of the bed, and the amount of bed the bottle is asked to heat. If the user keeps pushing the bottle about into cold areas with his feet, it will obviously cool off more quickly than if he clutches it to his stomach and surrounds it with arms and legs. In the former circumstances a cover on the bottle slows down the coolingoff process, at the same time slowing down also the heating of the bed. Clutched to the stomach, a cover makes less difference to the rate of heat transfer, but may be useful in helping the occupant to avoid getting burned. Bottles with finned or piled surfaces also give protection against burning, while at the same time transferring heat rather more rapidly from the larger surface area. The important thing for the user is not really the rate of transfer of heat from the bottle to the bed or its occupant, but the rate at which heat escapes from the bed as a whole to the outside world, and neither the shape nor the material of which a bottle is made have any significant effect on that. It is largely a question of how cold the night is and whether there are enough bedclothes on the bed.

The modern hot-water bottle, with its wide mouth and funnel-shaped neck, is easy enough to fill from any well-pouring kettle. The trick is simply not to go too fast. Careful housewives lay the bottle on its side to expel most of the air and then lift it slowly as it fills with water. Admittedly, however, a handle makes it easier to hold a bottle—particularly a large-sized bottle—while filling, and easier to keep the hands out of the steam. For those who still find difficulty, there is one make that has a short length of rubber tubing leading inwards through the side of the funnel above the stopper. The tube is pushed into the neck when the stopper is removed, and serves to lead the expelled air and steam smoothly and continuously out of the side while the water is being poured in round it.

Comfort is to some extent a matter of taste. There must be few people who do not appreciate the greater feeling of well-being provided by a flexible bottle that moulds itself to the shape of the body, than comes from a rigid or semi-rigid "pig." But there the general agreement seems to end.

For and Against Covers

Some people, for example, like covers and some do not. For those who do, a number of manufacturers produce bottles with tailor-made covers of luxurious texture and elegant appearance. Most of those covers are made of plush, velour, quilting or some similar fabric closely fitting the bottle, and carried over the mouth to give protection against the metal handle of the stopper. In one make, a similar result is achieved by thick rayon flocking bonded direct to the surface of the bottle. Covered bottles are the aristocrats of the hot-water bottle world. They have a genuine sybaritic appeal, and are particularly effective as Christmas presents.

For those who do not like covers, protection from too much heat may be provided by various patterns of ribbed and piled facing on the rubber itself. The protective surface may be on both sides of the bottle, or on one side only—the demand at the moment seems to be turning increasingly towards bottles with one side smooth and the other side ribbed or piled. Some manufacturers provide a small rubber shield to cover the handle of the stopper; one gets over the difficulty of hot metal by substituting an all-rubber push-in stopper for the more customary screw top.

Other distinctive features include an integrally moulded rubber strap to keep the stopper from being lost, and a spare washer attached by a moulded button inside the neck.

The great majority of hot-water bottles today are moulded. A few of the most rugged are still hand-built from rubber sheeting reinforced with fabric, and some of the most elegant are made by the dipping process, which produces a rubber that can take water straight from a boiling kettle. But the moulded bottle is by far the best known and most widely sold. Over the years manufacturers have expended a great deal of thought and ingenuity in varying and improving its appearance. All kinds of shapes are available from the smoothest of classical curves to the stiffest angular forms once labelled "contemporary," Improvements in rubber technology have made possible the use both of brighter primary colours and of more delicate pastel shades. Added decoration in the form of low relief may vary from simple geometrical patterns to naturalistic figures of birds, fish, nymphs, fawns, knights, ladies and domestic scenes. In a special department are the nursery bottles, moulded in shapes of animals and dolls, some frankly formalised, others sculptured almost completely in the round. There is also a set of baby bottles adorned with bed-time pictures specially designed by a well-known children's artist. Nor are sight and touch the only senses catered for: a whole range of otherwise sober bottles comes scented with violet, jasmine, rose, and lavender.

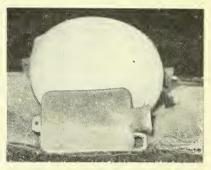
Finally there is the question of price. Hot-water bottles are today astonishingly cheap. The least expensive, which sold for about 2s. 11d. retail before the 1939-45 war, are priced today at 3s. 11d.—an increase of only 33 per cent. compared with an average increase in prices throughout the country of something nearcr 300 per cent. In other words, if hot-water bottles had gone up in price in the same proportion as most commodities, the cheapest would be selling today at 8s. 6d. or more, instead of under 4s., and the larger sizes and better qualities at anything from £1 to £3.

As it is, the remarkable success of rubber manufacturers in keeping down the prices of hot-water bottles has been achieved entirely by improvement in manufacturing techniques, and without any sacrifice in quality either of the materials used or of the final product. Some months ago an ordinary moulded bottle from a production line was subjected to an improvised test on the factory floor. It was an average bottle designed to hold $2\frac{1}{2}$ pints, and selling at 5s. 6d. retail. It was attached to a stirrup pump and no less than 10 gall, of water forced into it. As the illustration shows it became inflated like a balloon; but it did not burst.

In Great Britain, hot-water bottles are still made from

the best grades of natural rubber, which alone can meet the stringent standards of tensile strength, ageing, permanent set, and hot tear strength on which satisfactory performance must be based. Unfortunately the price of natural

In foreground, an ordinary 2½-pint rubber hot-water bottle. At rear, a similar bottle inflated to 10-gall. capacity.



rubber started going up at the beginning of the present year. At the moment of writing it is already higher than at any time since the Korean war. If the movement continues, or even if natural rubber prices remain at their present level, it is difficult to see how even the most efficient manufacturer can avoid some increase in the wholesale prices of his products before many months are past.

PHARMACEUTICAL SOCIETY OF NORTHERN IRELAND

Regulations regarding students

THE following is an extract from the regulations of the Pharmaceutical Society of Northern Ireland, which sets out the examinations recognised and the subjects required for registration as a student.

44.—(1) A candidate applying to be registered as a student of the Society shall furnish the Council with documentary evidence of having passed in the following subjects of one of the recognised examinations:—English language, a mathematical subject, physics, chemistry and any other subject, provided, however, that (a) the five subjects must have been passed on one and the same occasion, or (b) if the five subjects have not been taken at the one occasion then at least one of the subjects must have been passed at advanced (or higher) level, or credits must have been obtained in at least two of the subjects taken at ordinary (or lower) level.

(2) For the purpose of this regulation the following examinations are recognised by the Council:—The Grammar School Senior Certificate examination of the Ministry of Education for Northern Ireland; the Leaving Certificate examination of the Scottish Education Department; the General Certificate of Education examination of the following examining bodies:—University of Bristol; University of Durham; University of London; Cambridge Local Examinations Syndicate; Oxford and Cambridge Schools Examination Board; Oxford Local Examination Delegacy; the Associated Examining Board for the General Certificate of Education; Joint Matriculation Board of the Northern Universities; Southern Universities Joint Board for School Examinations; Welsh Joint Education Committee.

45.—Upon acceptance of a candidate the Council shall require him to forward to the Secretary:—(1) a fee of £4 4s. as prescribed in regulation 37; (2) a copy of his certificate of date of birth; and on receipt of same a certificate that he has been registered as a student will be sent to him.

NO CHOICE: Remarked Mr. E. J. W. Cuer, M.P.S., at a meeting of West Sussex Executive Council recently: "A doctor can refuse to have any patient on his list; a dentist can refuse to treat a patient, and an ophthalmic or dispensing optician can refuse to dispense an ophthalmic prescription, but a chemist or appliance supplier cannot refuse anybody."

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Hairdrying Hood—dries hair even faster—9/6
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PIFCO LIMITED LONDON & MANCHESTER

PIFCO MAKES BUSINESS EVEN BETTER

TRADE REPORT

The prices given are those obtained by importers or manufacturers for bulk quantities or original packages. Various charges have to be added whereby values are in many instances augmented before wholesale dealers receive the goods into stock. Crude drugs and essential oils vary greatly in quality and higher prices are charged for selected qualities.

LONDON, OCTOBER 7: Trading in all sections during the past week showed little change from previous weeks. Articles in short supply continued to dominate most inquiries.

Inquirers for IPECACUANHA found their usual sources hesitant to make firm offers. Some holders of BUCHU were willing to shade their prices to encourage business. SAFFRON continued to ease with little interest shown by the British market at the moment. STYRAX was quoted considerably higher forward at 31s. per lb., c.i.f.; the small spot supplies came into line although there was no record of business at those levels. TURMERIC was slightly dearer compared with the previous week.

In ESSENTIAL OILS Californian and Floridan ORANGE were easier.

ZINC OXIDE advanced £2 per ton during the week.

Pharmaceutical Chemicals

ACETIC ACID. — B.P. glacial in 10-ton lots is £112 per ton naked and technical (80 per cent.) £97. Carboys are £8 and demijohns, £10 per ton extra. Single carboys cost 1s. 8d. per lb. (3s. 8d. per kilo).

ALOIN. — Spot offers (14-lb. lots) are 31s. 6d. per lb.

p-Aminosalicylic acid. — The sodium salt is about 20s. per kilo for 1,000-kilo lots.

AMPHETAMINE.—One to 10-kilo lots are: Base, from 140s. to 160s. as to quantity; SULPHATE is 110s. to 130s. and *d*-AMPHETAMINE SULPHATE, 405s. to 420s. for similar quantities.

AMYLOBARBITONE. — B.P.C. is 77s. 6d. per kilo for minimum 25-kilo lots and sodium, B.P.C., 87s. 6d. per kilo.

BARRITONE.—Rate for less than 50-kilo lots is 53s. 6d. per kilo. The SODIUM derivative is 56s. 9d. per kilo.

BENZYL BENZOATE.—One-ton lots of B.P. grade are 4s. 6d. per lb.

BORAX.—B.P. grade for quantities of 1 ton and upwards; Granular, £56; crystals, £59 10s.; powder, £60 10s.; extra fine powder, £61 10s. per ton. Supplied in hessian sacks. Prices of commercial range from £46 to £52 10s. per ton, as to type and packing. Dehydrated borax is £70 per ton in paper-lined hessian bags or £69 in paper bags; carriage paid in Great Britain. Surcharges for smaller quantities: Less than 1 ton but not less than 5 cwt., 1's. per cwt.; 3 cwt., 2s.; 1 cwt., 3s.

BORIC ACID.—Prices (per ton) for B.P. grade in quantities of 1 ton and upwards are as follows:—Granular. £91; crystals, £99; powder, £96 10s.; extra-fine powder, £98 10s. per ton in lined hessian bags, carriage paid in Great Britain. Less £1 per ton if supplied in paper bags. Technical grades range from £77 to £86 10s. per ton according to type and packing.

Bromides. — Prices per lb. are as follows:—

| | [| 1 cwt. | 5 cwt. s. d. |
|-----------|------|--------|-----------------|
| POTASSIUM | | 2 6 | 2 5 |
| SOOIUM | | 2 6 | 2 5 |
| AMMONIUM | | 2 10 | 2 84 |

The prices quoted are for crystals (powder is 1½d, per lb, more) packages free, carriage paid terms. The kilo rates for 50-kilo lots are 5s. 6d, for potassium and sodium and 6s, 3d, for ammonium.

BRUCINE. — ALKALOID and SULPHATE in 100-oz. lots is now 10s. 6d. per oz.

BUTOBARBITONE.—B.P.C. is 82s. 6d. per kilo in minimum 25-kilo lots.

CHENOPODIUM.—Spot value is 38s. per lb. for original containers.

CITRIC ACID.—Quotations (per cwt.) for domestic material in drums are 225s, for 1-4-cwt. lots and 220s, for 5-cwt. lots, In paper bags 5-cwt. lots are 212s, 6d.

COCAINE.—For 16-oz. lots the price of the HYDROCHLORIDE is 91s, 6d. per oz. and ALKALOID, 101s. Subject to D.D.A. Regulations.

CREAM OF TARTAR.—Rates for the home trade:—1-ton lots, 231s. per cwt.; 10-cwt., 232s.; 5-9-cwt., 233s.; 2-4-cwt., 234s.; 1-cwt., 235s.

CREOSOTE.—B.P. quality, ex beechwood, is from 6s. 9d. to 7s. 6d. per lb.

CRESOL.—Price of B.P. quality from distillers is 7s. 9d. per gall. in 5-gall. lots.

CYCLOBARBITONE. — Less than 25 kilos: B.P.C., 73s. per kilo. CALCIUM 85s.

DEXTROSE. — In bulk, MONOHYDRATE,, £76 per ton, delivered; ANHYDROUS, £115 per ton.

DICOPHANE (DDT).—Prices are as follows:—1-cwt. lots 3s. 2d. per lb.; 5-cwt., 3s. $0\frac{1}{2}$ d.; 1-ton, 2s. 11d.

DIPHENAN.—Prices range from 55s. 3d. (56-lb.) to 63s. (1-lb.) per lb.

ETHER.—Per lb. in winchesters:—TECH-NICAL B.S.S., and SOLVENT, 5-cwt. 2s. 7d.; (4s. 1½d. per litre). In drums the price is 2s 2d. per lb. ANÆSTHETIC, B.P., 5-cwt., 3s 10d.; 10-cwt., 3s. 9d.

GLYCEROPHOSPHATES.—Rates per lb. for 1-cwt. lots are as follows:—ACID, B.P.C., 20 per cent., 4s. 7d.; CALCIUM, soluble, B.P.C., 12s.; IRON, B.P.C., scale, 15s. 9d. and powders, 14s. 9d.; MAGNESIUM, soluble B.P.C., 14s. 3d., and insoluble, 7s. 6d.; MANGANESE, B.P.C., 27s.; POTASSIUM, 50 per cent., B.P.C., 3s. 9d. and 75 per cent., B.P.C., 5s. 6d.; SODIUM, 50 per cent., 2s. 7d.; 75 per cent., 4s. 6d.; 100 per cent., 8s.

HEXAMINE.—B.P. is 1s. 11½d, per lb. for 1-ton lots, delivered in 1-cwt. kegs. Technical is threepence per lb. under those rates.

HEXOBARBITONE. — In 25-kilo lots or over the price is 115s. per kilo.

HOMATROPINE.—Current rates (per oz.) for 16-oz. lots are now: Alkaloid, 30s. 6d.; Hydrobromide, 24s. 6d.; Hydro-Chloride, 28s. 6d.; Methylbromide, 25s. 6d. 1-oz. rates are 1s. 6d. per oz. above those rates.

HYDROCYANIC ACID. — Dilute B.P.C. is from 3s. 2d. to 4s. per litre, as to quantity; Scheeles is from 3s. 10d. to 4s. 9d.

Hyoscine hydrobromide.—Price per oz. is 102s.

ICHTHAMMOL. — B.P. is from 2s. to 2s. 6d. per lb. in 1-cwt. lots as to origin and container.

Lactates. — Calcium, B.P., is 2s. 3d. per lb, in 5-cwt. lots and 2s. 4d. in 1-cwt. lots; Calcium sodium for similar quantities is 4s. 9d. and 4s. 10d. per lb.

Lactic acid. — B.P. 4s. 5d. per lb. for 12-winchester lots and 4s. 4d. for 5-cwt. lots.

Lactose.—English, in 1-ton lots packed in 1-cwt. paper-lined sacks, is £129 10s. per ton, delivered in the United Kingdom.

Paracetamol.—Minimum price for 10-cwt. lots is 10s. 9d. per lb.; 56-lb., 11s. Paraffins. — Prices to wholesale dis-

tributors are:—Liquid: HEAVY, B.P., £102 2s. 6d. per ton; LIGHT, B.P., £84; Technical White oils, £75 10s. for the LIGHT and £89 for the MEDIUM. All in 40–50 gall. returnable loaned drums, delivered U.K. Soft: WHITE, medium consistency is £110 15s. per ton and soft consistency £107 7s. 6d. Yellow, £88 10s., all B.P., in non-returnable drums delivered.

PHENAZONE. — Duty free material is quoted at 9s. 6d. per lb.

PIPERAZINE.—ADIPATE is from 24s. 6d. to 26s. per kilo; citrate from 23s. 6d. to 25s. HEXAHYDRATE, 17s. 6d. to 18s. 6d. and PHOSPHATE, 28s. to 30s.

POTASH SULPHURATED. — Lump, B.PC., is 2s. 4d. per lb. in 1-cwt. lots.

Potassium acetate. — (Per lb.) 1-cwt. lots, 3s.; 5-cwt., 2s. 8d.; 10-cwt., 2s. 6d.

POTASSIUM BICARBONATE. — B.P. powder is 110s. per cwt. 1-4-cwt. lots and 105s. per cwt. for 5-cwt. and over.

POTASSIUM BROMATE.—In 5-cwt. lots the price being asked is 5s. 3d. per lb.

POTASSIUM CHLORIDE. — In 1-cwt. lots B.P., is 1s. 6d. per lb.

POTASSIUM HYDROXIDE.—B.P. sticks are from 6s. 8d. per lb. and pellets, 5s. 1d.; technical flake, 1s. 4d.

POTASSIUM 8-HYDROXYQUINOLONE SUL-PHATE. — 1 kilo is 47s. 1d. and 50 kilos, 44s. per kilo.

POTASSIUM NITRATE. — Pharmacopæial quality is 110s. per cwt. (crystal or powder) in 1-cwt. lots.

Potassium quadroxalate. — One-cwt. lots are 3s. 6d. per lb.

Potassium sulphate. — One-cwt. lots are from 1s. 2d. to 1s. 3d. per lb.

PROCAINE HYDROCHLORIDE.—100-kilo lots are about 45s. per kilo.

Pyrogallic acid. — Pure crystals are 22s. 6d. per lb. in 1-cwt. lots; resublimed, 24s. 3d.

QUINIDINE.—Prices are as follows:—

| Home Trade | | 500 oz. or more | 100-400 oz |
|----------------|-----|--------------------|------------|
| 0 | [| per oz. | per oz. |
| QUINIDINE | - 1 | s. d. | s. d. |
| ALKALOID | | 7 11½ | 8 1½ |
| GLUCONATE | | 9 41 | 9 6½ |
| HYDROBROMIOE | | 6 7 | 6 9 |
| HYDROCHLORIDE | | 6 9 | 6 11 |
| SULPHATE | | 6 0 | 6 2 |
| HYOROQUINIDINE | | | |
| HYDROCHLORIDE | | 11 2 | 11 4 |
| GLUCONATE | | 8 61 | 1 8 81 |

For export quinidine alkaloid ranges from £12 12s, 3d, to £12 17s, 4d, per kilo and sulphate from £9 10s, 5d, to £9 15s, 6d.

Salol.—Quotations for B.P.C. are about 9s. per lb. for 1-cwt. lots.

Santonin. — 5-kilo lots, 400s. per kilo (11s. 4d. per oz.).

STRYCHNINE.—Per oz.; Alkaloid, crystals, 10s. 6d. Hydrochloride, 10s. 6d.; NITRATE, 11s.; SULPHATE, 9s. 6d.; all for 100-oz. lots in free containers.

TEREBINTH.—B.P. is 2s. 3d. per lb.

ZINC CARBONATE. — In 1-cwt. lots the price is 1s. $9\frac{1}{2}$ d. per lb.

ZINC CHLORIDE. — B.P.C. cake from 4s. 6d. to 4s. 10d. per lb.; sticks from 5s. 10d. to 6s. 2d. per lb. Technical, 115s. per cwt.

ZINC PEROXIDE. — Price (per lb.) for 1-cwt. lots of B.P. is 5s. 3d.

ZINC SULPHATE.—B.P. in 1-cwt. lots is quoted at 1s. 9d. per lb.; technical, 60s. per cwt.

ZINC OXIDE. — Dearer. B.P. quality is now: In 2-ton lots £116 per ton; 1 ton, £117 per ton; 10 cwt., £119.

Crude Drugs

ACONITE. -- Spot supplies of Spanish napellus are 2s. 6d. per lb.

AGAR.—Kobe No. 1 is 11s. 6d. per lb., in bond, and for shipment, 11s. 3d., c.i.f.

ALOES. — Cape primes, spot, 200s, per cwt. quoted; shipment nominally 177s. 6d., c.i.f. Curação, 500s., spot.

BELLADONNA.—Herb is 8s. 3d. per lb. on the spot. Root is 1s. 6d. spot; shipment, 1s. 3d., c.i.f.

BENZOIN.—Sumatra block on the spot is £22 to £28 as to quality.

BUCHU.—Spot rounds are 4s. to 4s. 3d. per lb. and new-crop for shipment, 4s.,

CALABAR BEANS.—Spot offering at 1s. 7½d. per lb.

CALAMUS.—Root is quoted at 1s. 2d. per lb., c.i.f.

CAMPHOR.—B.P. powder is 3s. 7½d. per lb. in bond.

Capsicums. — East African are from 140s. to 175s. per cwt. on the spot.

CARDAMOMS. — Aleppy greens, spot, 14s. per lb.; prompt shipment, 13s. 9d., c.i.f. Seeds, shipment, 20s., c.i.f. CINCHONA.—Druggists' bark, Portuguese

West African succirubra, testing over 9 per cent. t.a., 1s. 5d. per lb., ex store.

CINNAMON.—Ceylon for October (c.i.f.) per lb.; OOOO, 6s. 0½d.; OOO, 5s. 8½d.; OO, 5s. 7d.; seconds, 4s. 1¾d.; featherings, 1s. 11¾d.; quillings, 3s. 6¾d.; chips, 1s. $3\frac{1}{4}$ d.

CLOVES. — Zanzibar on the spot are 2s. 11d. per lb.; shipment, 2s. $6\frac{3}{4}$ d., c.i.f. COCILLANA.—Bark is 2s. per lb. on the spot.

COLOCYNTH PULP.—Spot, 2s. 6d. per lb. DIGITALIS LEAF.—Purpurea from 1s. 2½d. to 2s. 7d. per lb., c.i.f.

ELEMI. — Spot from 1s. 10½d. per 1b. shipment, 1s. 7d., c.i.f.

Ergot. — Portuguese, 6s. 6d. per lb.; East European not offering.

Frangula.—Spot is 105s. per cwt.

GENTIAN. — Spot: French, 160s. per cwt.; Jugo-Slavian, 152s. 6d.

HENNA.—Indian on the spot is now 95s. per cwt., ex wharf.

HONEY. — Australian light amber 102s. 6d. to 105s. and medium amber 95s. 1028, 6d. Argentine, 100s, to 105s.; Jamaican, 115s. to 120s.; New Zealand clover 170s., nominal; all per cwt. on the

HYDRASTIS.—Spot, 23s. per lb.

IPECACUANHA.—Shipment (c.i.f.). Nicaraguan, 67s. 3d. per lb. Colombian afloat, 53s., c.i.f., and Matto Grosso, 55s. to 56s., c.i.f., as to test.

Karaya. — No. 1 gum on the spot is quoted at 260s. per cwt. nominal, No. 2 at 230s., nominal.

KOLA NUTS. — Jamaican for shipment, 7d. per lb., c.i.f. African, $5\frac{1}{2}$ d. spot and

Lanolin. — Anhydrous, B.P. is from 170s. to 175s. per cwt. in 1-ton lots and hydrous, B.P., 150s., free drums, delivered.

LIQUORICE. — Natural root: Persian on the spot is 50s.; Anatolian, 60s. and Russian, 66s. per cwt. Block juice: Anatolian and Chinese, 190s. per cwt.; Italian stick from 310s. to 476s. per cwt.

LOBELIA HERB.—Spot offers of American are 3s. 9d. per lb. and for shipment 3s. 6d., c.i.f. Dutch 3s. 2d. (old crop), c.i.f. for shipment; spot 3s. 5d.

LYCOPODIUM.—Spot material cleared.

MACE.-Whole pale blade 23s. 6d. per Ib. on the spot.

MENTHOL.—Chinese spot cleared, Business done afloat at 54s., c.i.f.; September—October shipment quoted at 53s. 6d. per lb., c.i.f. Brazilian 41s. in bond.

NUTMEGS. - West Indian 80's 17s. per lb., spot; sound unassorted, 10s. 6d.; defectives, 8s. 6d.

Nux vomica.—Scarce. Shipment, 125s. per cwt., c.i.f., quoted.

ORANGE PEEL. — Spot: Sweet ribbon, 2s. per lb.; bitter_quarters: West Indian, 1s.; Spanish, 1s. 7d.

ORRIS ROOT. — Florentine is 345s. per cwt.

Papain.—Tanganyikan, 16s. per lb., c.i.f., for grade one, spot 19s. Ceylon No. 1 white, 15s., c.i.f.

PEPPER. — White Sarawak spot 3s. 3¹/₄d. per lb.; October-November shipment is 3s. 2d., c.i.f. Black Sarawak on spot is 2s. 14d. per lb. with shipment 2s. 1d. per lb. Black Malabar, 265s. per cwt. spot and 247s. 6d., c.i.f.

PEPPERMINT LEAVES.—Dutch, 2s. 2d. to 2s. 10d. per lb., c.i.f.

PIMENTO.—Spot value is 550s. to 560s. per cwt.

Podophyllum.—*Emodi* is 200s. per cwt., spot, and 195s., c.i.f.

Pyrethrum.—Extract, minimum, 25 per cent. w/w pyrethrins, is 75s. per lb. for small lots.

Quassia.—Spot offers are 55s. per cwt., ex wharf.

QUILLAIA.—Spot offers of whole bark at 125s. per cwt.; cut, 160s. Whole for shipment, 90s., c.i.f.

RAUWOLFIA.—Canescens, 3s. 6d. per lb., c.i.f. Vomitoria, 2s. 3d., c.i.f.; Serpentina, 6s., c.i.f. asked.

RHUBARB. — Chinese small rounds 6s. $4\frac{1}{2}$ d. to 6s. 9d. on the spot.

SAFFRON. — Spanish is quoted at 160s.

SARSAPARILLA.—Jamaican native red on the spot is 2s. 6d. per lb. Shipment, 2s. 1d., c.i.f.

2s. Id., c.i.f.

SEEDS.— (Per cwt.). ANISE.— Spanish, 160s.; Turkish, 135s., both duty paid. CARAWAY.—Dutch quoted at 120s., duty paid. CELERY.— Indian offered at 150s. spot; shipment, 119s., c.i.f. CORIANDER.—Moroccan on spot steady at 48s. duty paid; Rumanian quoted at 50s. duty paid and 42s, 6d, in bond; Moroccan for shipment, 34s., c.i.f. CUMIN.— Spot stocks of Iranian are firmly held at can for shipment, 348., c.i.f. CUMIN.—Spot stocks of Iranian are firmly held at 275s., duty paid and 252s. 6d., in bond; Indian is the most attractive for shipment at 215s., c.i.f. Dill.—Indian unchanged at 80s., spot; shipment, 72s. 6d., c.i.f. Fennel.—Chinese on spot quoted at 130s., duty paid. Fenugreek. — Moroccan on spot 48s. 6d., duty paid. MUSTARD.—English, 75s. to 95s. according to quality. lish, 75s. to 95s. according to quality.

SENEGA.—Spot is nominally 20s. per lb.; shipment, ideas 19s. 6d. per lb., c.i.f.

SENNA. — Tinnevelly LEAVES, prime No. 1, 1s. 5d. per lb., f.a.q.; No. 3, 10d. Pods: Manufacturing (f.a.q.), 1s. 3½d, and hand-picked, 1s. 9d. to 2s. 2d. Alexandria Manufacturing, offered from 1s. 6d. with hand-picked from 4s, to 6s, 6d.

STRAMONIUM. — Indian LEAVES 60s. per cwt., spot. Dutch 0.5 per cent. alkaloid, 92s., c.i.f.

STYRAX.—Very short on spot with 31s. er lb. asked; shipment 31s., c.i.f., nominal.

TONQUIN BEANS.—Para on the spot are offered at 8s. 3d. per lb. Angostura, 11s.

TURMERIC. — Madras finger on spot is 110s. per cwt. for old crop; current crop, November-December shipment, 95s., c.i.f.

Valerian root. — Spot: Indian (with rootlets) is 130s. and Belgian, 175s. to 195s. per cwt. Dutch whole (max. $2\frac{1}{2}$ per cent. sand) for prompt shipment, 159s.,

Vanillin. — Rates (per lb.) are now: 5-cwt. lots, 23s. 3d.; 1 cwt. 23s. 6c56-lb., 23s. 9d.; smaller quantities, 24s.

Essential and Expressed Oils

ALMOND. — Moroccan, 6s. 6d. per lb., duty paid.

AMBER.—Rectified on the spot is 1s. 6d. per lb. Anise.—Chinese, 8s. 1½d. per lb., spot; shipment, 7s. 11d., c.i.f.

BERGAMOT.—Spot supplies are from 85s.

Bois de Rose.—Brazilian is 14s. 9d. per lb. on the spot and 14s. 6d., c.i.f.

CADE. — Spanish is 3s. 6d. per lb. for drum lots.

CINNAMON. — From quillings, best English-distilled is 50s. per oz.; other B.P. oils from 165s. per lb. Ceylon leaf, spot. 9s. 6d. per lb.; rectified, 10s. 6d. per lb.; Seychelles, 8s. 6d., spot.

Cttronella. — Ceylon, spot 5s. 6d.: shipment, 5s. per lb., c.i.f. Formosan, spot 5s. 3d. in bond, shipment 5s. 1d.,

CLOVE.—Madagascar leaf, spot, 9s. 3d. per lb. duty paid; shipment, 8s. 1½d., c.i.f. Rectified 87–88 per cent., 8s. 6d. Distilled bud oil, English B.P., 30s. to 31s.

DILL.—Imported is 8s. 6d. per lb., spot. FENNEL.—Spanish sweet on the spot is quoted at 12s. 6d. per lb.

GERANIUM. — Bourbon is 185s. per lb. on the spot.

GINGER. — English-distilled oil is 160s. per lb. Imported: Jamaican, 130s.; Chinese, 72s. 6d., duty paid.

LEMONGRASS. — Spot 8s. per lb., and shipment, 7s. 10d., c.i.f.

LIME.—West Indian distilled is in the region of 50s. per lb. on the spot.

NUTMEG.—Imported B.P. oil is 90s. per lb. English distilled 100s.

Orange.—Spot quotations of sweet oil include Floridan at 5s, per lb.; Californian, 7s. 6d.; West Indian, 7s.; West African, 14s.; Israeli, 12s. 6d. Terpeneless is 200s. per lb., spot.

PATCHOULI. — Penang is 35s., duty paid and 31s., c.i.f., per lb.

PEPPERMINT.—Arvensis: Chinese is 27s, per lb., spot nominal: September—October shipment nominally 24s., c.i.f. Brazilian 10s. 9d. to 11s. 3d. both spot and shipment. Piperita: Italian "Mitcham-type" from 42s. 6d. to 48s. 6d.; American, 22s. 6d. to 28s., as to origin.

Petitgrain.—Paraguay 18s. 6d. per lb., spot; shipment, 17s. 9d., c.i.f.

PINE.—Pumilionis on the spot is 16s. er lb.; sylvestris, 25s.; Siberian (abietis), 12s. 6d. to 14s.

SANDALWOOD.—Mysore spot 92s. 6d. to s. per lb. East Indian, 92s. 6d. to 95s. 95s. per lb. East Indi per lb. Australian, 60s.

Sassafras.—Brazilian is from 3s. 6d. per lb., duty paid.

SPEARMINT.—Offers of U.S.P. grade are from 37s. 6d. per lb., spot. Chinese 32s., in bond.

Tangerine.—Hand-pressed is 55s. per lb. and machine-pressed, 42s. 6d.; others 26s. to 28s. on the spot.

UNITED STATES REPORT

NEW YORK, OCTOBER 6: Strikes in many leading domestic manufacturing industries have been making their influence felt on United States heavy chemical markets. Among Pharmaceurical Chemicals, Piperazine was advanced to make the anhydrous \$1'80 a lb., up 20 cents, and the hexahydrate 86 cents, up nine cents. Santonin was raised to \$25.50 a lb., up \$1.50. Buck-THORN BARK dropped two cents to 15 cents. Formosan CITRONELLA OIL declined two cents to 78 cents per lb. for resale.

HERB CROP REPORT

THE following report has been received from William Ransom & Son, Ltd., Hitchin, Herts:-

Weather conditions have been nearly ideal this summer for the cultivation of medicinal crops. Weed control has been a comparatively simple job after several difficult seasons.

BELLADONNA. - A better than average crop, harvested under excellent conditions.

A plantation sown rather late has made poor growth due to lack of rainfall.

CHAMOMILE.—For the first time for many years there have been two cuts. The weight per acre is below average but the yield of oil was good.

HENBANE.—An exceptional crop, particularly the first biennial. Because the plants had deep roots the lack of rain had no effect. Several cuts have been made this summer and autumn, and the alkaloidal strength was the highest for many years. We harvested enough to cover our normal requirements.

LAVENDER.—A good crop showing no sign of any disease. We have again increased our acreage. Perfect weather conditions for the established crop although it has been impossible so far to plant out next year's plantations.

LETTUCE. — An average crop harvested. We increased our acreage but it is still not enough for the demand. The autumn plantation is suffering badly from lack of

PEPPERMINT.—The crop was cut under ideal conditions. As in previous years no rust was apparent. The yield of oil was rather above average but the plants were shorter than usual due to the dry condition of the soil.

We have also small plantations including Aconite, Foxglove, Greater celan-DINE, LIQUORICE, SQUIRTING CUCUMBER. Collection of wild plants such as Poppy PETALS, DANDELION ROOT and ELDERBERRIES becomes more difficult each year but we have managed to get fair stocks of all those lines.

WORLD TRADE

American Expansion in Holland.-The Haarlem subsidiary of Merck Sharp & Dohme has started the production of chlorothiazide, following investments amounting to more than 3,500,000 guilders. The new product will mainly be exported to other European countries and the Middle East.

U.S. Dock Strike. — All American ports from Maine to the Gulf of Mexico have been paralysed by a dock strike. Affecting 200 ships in New York alone, the strike, which started on October 1, has cut off more than 50 per cent. of the foreign steel imports which are vital to U.S. industry during the current national steel strike as well as chemical supplies.

East German Production of Vitamin B₁₂.—At a recent economic conference of the district of Gera, Eastern Ger-many, held in Jena town hall, Dr. Horst Koedel (scientific director, Jena Pharmaceutical Industry), reported on vitamin B₁₂. During the past year only 525 gm. of the vitamin was prepared in his laboratories he said, and the cost worked out at 2,000 marks per gm. But now the efforts of a working party of five scientists and five workers had led to the "discovery of a new technological process by which it will be possible to obtain 500

gm. monthly" and the cost of producing 1 gm. would be reduced to 200 marks.

Indian Import Policy.—The Indian Government has announced its import policy for the six months from October 1 to March 31, 1960. It shows little relief from drastic cuts imposed eighteen months ago because of a foreign exchange shortage. In the new policy the emphasis is on maintenance of the economy, raw materials for industries and export promotion. There is a slight liberalisation of the import of films and negatives and printing paper. A spokesman of the Commerce Industry said Indian imports in the first six month of 1959 totalled 4,160 million rupees. The policy for the next six months was expected to maintain the same level of imports, he said.

TRADE MARKS APPLICATIONS ADVERTISED BEFORE REGISTRATION

From the "Trade Marks Journal," September 23

For preparations containing medicaments for use in removing nicotine and tobacco stains from the hands, being goods in paste, cream or liquid

NICOCLENZ, 785,836, by Rustat Pharmaceuticals, Ltd., Edgware, Middlesex.

For eau de Cologne, perfumed sachets, perfumes; and toilet powders (for personal use), toilet waters, toilet lotions, bath salts and bath oils, none being medicated (3)

QUAINTANCE, 790,135, by Avon Products, Inc., New York, U.S.A.

For perfumes, toilet preparations (not medicated), cosmetic preparations, dentifrices, depilatory preparations, toilet articles (not included in other classes), sachets for use in waving the hair, soaps and essential oils (3)

GOOD COMPANIONS, B790,471, by Cussons Sons & Co., Ltd., Kersal, Manchester, 7.

All goods (5)

PROTOSTAN, 781,955, by Howard Lloyd & Co., Ltd., London, S.W.1. Device, 788,001, by Carnegies of Welwyn, Ltd., Welwyn Garden City, Herts. TIGAN, 789,385, by Roche Products, Ltd., Welwyn Garden City, Herts, PREFACOSE, 790,113, by Therapeutic Products, Ltd., London, W.1.

For anthelmintic preparations for luman use

being goods for export (5)

RONDOXYL, 784,703, by Wellcome Founda-

tion, Ltd., London, N.W.1. For dental modelling wax (5)

SOLUTEX, 785,181, by Associated Dental Products, Ltd., Purton, Wilts.

For cough mixtures (5)

VELPEX, 785,200, by Velford Pharmaceutical Co., Ltd., Manchester, J.

For pharmaceutical preparations for human use

FERGLUVITE, 785,236, by Agprolin, Ltd., Oldham, Lancs,

For pharmaceutical preparations and substances, but not including infants', invalids' or dietetic

foodstuffs or medicated confectionery (5) ATEROID, 785,243, by Crinos Industria Farm-

acobiologica S.p.A., Milan, Italy.

For pharmaceutical preparations (5)

SENTOR, 785,326, by Chemway Corporation, Wayne, New Jersey, U.S.A. RAUTRAX, 788,962, by E. R. Squibb & Sons, Ltd., London, W.1.

For pharmaceutical preparations and substances combining antipyretic and analgesic properties (5) THOMAPYRIN, B786,591, by Dr. Karl Thomac G.m.b.H., Biberach-on-the-Riss, Germany.

For medicated confectionery (5)

GUARDEES, 786,914, by George Martin (Confectioners), Ltd., Kirkby-in-Ashfield, Notts. DELROSETS, 789,542, by Scott & Turner, Ltd., Newcastle-on-Tyne,

For pharmaceutical preparations, fungicides and antiseptics (5)

PIMAFUCINE, 787,485, by Royal Netherlands Distilleries, Delft, Holland.

COMMERCIAL TELEVISION

Programme details are given to enable chemists to put in linking-up displays if they wish. Figures in the columns represent number of appearances of the product during the week.

| October 18–24 | London | Midland | North | Scotland | Wales | South | Z.E. |
|-------------------------------------------|--------------|-----------|--------|----------|-------|-------|-----------------------|
| Alka-Seltzer | 1 | 1 | 1 | _ | 2 | 1 | 1 |
| Amami wave set | 2 | 2 | 2 | 2 | 2 | 2 | |
| Anadin | 3 | 4 | 3 | 4 | 4 | 3 | 2 |
| Antussin | 4 | 2 | 2 | 3 | 3 | 3 | 2 |
| Aspro | 1 | | _ | _ | _ | _ | _ |
| Ayrton's antiseptic cream | _ | _ | _ | 2 | _ | _ | _ |
| Beecham's pills | _ | 2 | 1 | 2 | 2 | 2 | 2 12 |
| Beecham's powders | 12 | 4 | 4 | 4 | 4 | 11 | 12 |
| Bristow's lanolin shampoo | 1 | 2 | 2 | _ | _ | 2 | |
| Brylcreem | 4 | 2 | 3 | 6 | 11 | 2 2 | 7 |
| California syrup of figs | - | 1 | 1 | _ | _ | — | _ |
| Camay soap | 4 | 3 | 5 | 4 | 4 | 2 | 2 |
| Cephos | _ | _ | 3 | _ | _ | — | _ |
| Christy's lanoline face pack | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Cooper's aerosols | 1 | 2 | 2 | 2 | 1 | 2 | 2 |
| Damaskin | 1 | 1 | _ | _ | _ | | _ |
| Dekrasil | _ | _ | _ | _ | | _ | 1 |
| Delrosa rose hip syrup | 1 | 2 | 2 | 2 | 2 | 2 | 2 |
| Delsey toilet rolls | 3 | - | — | 2 | 5 | — | 3 |
| Dextrosol tablets | 3 | 1 | _ | _ | _ | 3 | _ |
| Euthymol tooth-paste | — | 1 | — | 1 | _ | _ | 2 |
| Fennings Little Healers | — | 2 | 3 | — | _ | _ | _ |
| Formula 21 | 3 | 3 | 3 | 3 | 3 | 3 | 3 |
| Fynnon salt | 2 | 1 | 1 | 1 | 1 | 1 | 1 |
| Germolene | 3 | 3 | 3 | 3 | 4 | 2 | 3 |
| Gillette | 1 | 1 | 1 | 1 | 1 | 1 | 3 |
| Hiltone | 3 | _ | _ | _ | _ | 3 | _ |
| Imperial Leather | 3 | 2 | 2 | 3 | _ | — | 3 |
| Johnson's Baby Suds | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Knights Castile soap | _ | 1 | 2 | _ | 2 2 | 2 2 2 | 1 |
| Loxene shampoo | 1 | 3 | 3 | 1 | | 3 | 3 2 1 2 2 |
| Lucozade | 4 | 2 | 3 | | 4 | 3 | 2 |
| Mac throat sweets | 3 | 4 | | _ | 2 | | _ |
| Marigold baby pants | 3 | 4 | 4 | 4 | 4 | 3 | 4 |
| Max Factor preparations Milk of Magnesia | 1. | | _ | 2 | 1 | I | 1 |
| Milk of Magnesia tablets | | 3 | 3 | _ | | | 1 |
| Pantene | | | | _ | 5 | 4 | _ |
| Pepsodent tooth-paste | 3 | 3 | 2 | 3 | 3 | 3 | 3 |
| Phensic | 3 | 3 | 3 | 3 | 3 | 3 | 3 |
| Phillips' tooth-paste | 2 - | | _ | 1 | | _ | _ |
| Phosferine | ĩ | 1 | 1 | 1 | 1 | 1 | 1 |
| Phyllosan | _ | 1 | 1 | | _ | _ | _ |
| Polly Roll | 1 | 1 | 1 | 2 | 1 | 1 | 1 |
| Ponds | | 3 | 3 | 3 | 3 | 3 | 3 |
| Remington shavers | 2 | 2 | 2 | 2 | 1 | | 1 |
| Rennies | 3 2 2 | 2 | 2 2 2 | 2 | 2 | 1 | 2 |
| Ribena | 2 | 2 | 2 | 2 | 1 | 2 | 3 |
| Rimmel "Beauty on a | | | | | | | |
| Budgct '' | 2 | 4 | 2 | 3 | 3 | 3 | 1 |
| Rinstead pastilles | _ | 1 . | | _ | 1 | 1 | _ |
| Sanatogen | _ | 3 . | _ | - | | _ | _ |
| Scotties | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Setlers | _ | 2 - | | _ | 2 · | - | _ |
| Shavex | 2 | 2 - 2 - 2 | 2 | 1 - | | _ | _ |
| Silvikrin pure | 1 | 2 | 1 | 1 | 1 | 2 | 3 |
| Silvikrin shampoo | 2 | 3 | 3 | 10 | 2 | 10 | 3 |
| Sun Orange Quosh | | | | _ | 4 . | | _ |
| Tru-gel | 4 | 4 | 3 | 3 | 3 | 4 | 2 |
| Valderma balm | 4 | 4 | 1 | 1 - | - · | - · | 5 |
| Vaseline petroleum jelly | 5 | 5 | 5 | 5 | 5 | 5 | 5 |
| Veno's cough mixture | 3 | | 3 | 3 | 1 | 1 | 1 |
| Vykmin Yeast-Vite | 2 | 2 | 1 2 | 2 | 2 | 1 | 1 |
| Yeast-Vite | 4 | _ | _ | | | | |
| DDINTE AND T | т | ID | T : | T | 787 | - | 7 |

PRINT AND PUBLICITY

PUBLICATIONS

Price Lists
ASPRO-NICHOLAS, LTD., 225 Bath Road, Slough, Bucks: General Products Division, September

PICOT (SALES), LTD., 12 Queen Caroline Street, London, W.6: Conditions of sale and price list.

Catalogues

Albright & Wilson (Mfg.), Ltd., 1 Knights-bridge Green, London, S.W.1: General chemicals.

E. K. Cole, Ltd., Southend-on-Sea, Essex. Heating catalogue 1959-60.

JOHN DALE, LTD., Brunswick Park Road, London, N.11: Packaging materials.

Booklets

BAKELITE, LTD., 12 Grosvenor Gardens, London, S.W.1: "Plastics in Packaging," No. 1, September 1959. Pp. 8. Vol. 1,

Periodicals

BRUCE STARKE & Co., LTD., 5 Fenchurch Street, London, E.C.4: Dragoco Report No. 9, 1959.

Current Iodine Educational Bureau, Chile House, Ropemaker Street, London, E.C.2: Current Iodine Literature, Vol. 6, No. 11,

MOND NICKEL Co., LTD., Thames House, Millbank, London, S.W.1: Inco-Mond Magazine, No. 11. Pp. 36.

PRESS ADVERTISING

J. ALLEN RUBBER Co., LTD., Whitecroft, Lydney, Glos: Marigold rubber gloves. During October in Sunday Graphic, Sunday Express, The People, The Queen, The Lady, Housewife, Home, Woman's Journal, Woman and Beauty.

BOVRIL, LTD., Old Street, London, E.C.1: Virol. In national daily and Sunday newspapers, provincial Press and leading women's magazines.

BYARD MANUFACTURING Co., LTD., Woolpack Lane, Nottingham: Halo and Tango hair nets. In popular women's magazines.

COMING EVENTS

Items for inclusion under this heading should be sent in time to reach the Editor not later than first post on Wednesday of the week of insertion.

Sunday, October 11

MANCHESTER BRANCH, GUILD OF PUBLIC PHARMA-CISTS, Belle Vue Zoo, at 10.15 a.m. Conducted tour

Monday, October 12

Bull and Butcher, Whetstone, London, N.20, FINIHLEY at 8 p.m. Talk.

London Nursing Exhibition, Seymour Hall, Seymour Place, London, W.1, at 12.15 p.m. Until October 16.

LONDON SECTION, ROYAL INSTITUTE OF CHEMIS-TRY, County Technical College, Reigate Road, Ewell, at 7 p.m. Dr. A. T. James on "Gas Phase Chromatography."

SOUTH-WEST LONDON CHEMISTS' ASSOCIATION
BRANCH, PHARMACEUTICAL SOCIETY, Lambeth
town hall, Brixton Hill, London, S.W.2, at 8.30 p.m. Talk.

Tuesday, October 13

BIRMINGHAM PHARMACEUTICAL ASSOCIATION Branch, Pharmaceutical Society, Imperial hotel, at 8 p.m. Dr. N. A. Duncan on "Flying Doctor Service."

HARROGATE BRANCH, PHARMACEUTICAL SOCIETY, Blue Bird café, Parliament Street, at 7.30 p.m. Mr. T. Heseltine (member of council, Pharmaceutical Society) on "Current Pharmaceutical Affairs."

LONDON SECTION, ROYAL INSTITUTE OF CHEMIS-TRY, Technical College, Brighton, at 7 p.m. Dr. R. F. Hunter on "The Structure of Phenol-Formaldchyde and Allied Resins."

LONDON UNIVERSITY, Post-graduate Medical School, Ducane Road, London, W.12, at 4 p.m. Dr. E. H. Belcher on "Radio-isotopes-

Fundamentals " (first of ten lectures).

NORTHAMPTON BRAN. H, PHARMACEUTICAL SOCIETY,
Corner House café, Wood Hill, at 7.30 p.m.

SOCIETY OF CHEMICAL INDUSTRY, 14 Belgrave Square, London, S.W.1, at 6 p.m. Joint meeting chemical engineering and food groups.

SOUTH-EAST LONDON CHEMISTS' ASSOCIATION AND METROPOLITAN BRANCH, PHARMACEUTICAL SO-CIETY, New Cross inn, 323 New Cross Road, London, S.E.14, at 8 p.m. Mr. T. C. Thomas on "A Visit to the Soviet Union."

WEST KENT BRANCH, PHARMACEUTICAL SOCIETY, Royal Bell hotel, Bromley, at 8 p.m. Mr. G. A. R. Tomes (20th Century Electronics, Ltd.) on "New York."

Wednesday, October 14

BIRKENHEAD AND WIRRAL PHARMACISTS' ASSOCIA-BRANCH, PHARMACEUTICAL SOLIETY,

Golden Primrose restaurant, at 7.30 p.m. "Get-together" meeting, sherry tasting party. Enfield Chemists' Association, Firs hall,

Winchmore Hill, London, N.21, at 8 p.m. Supper dance.

GLASGOW AND WEST OF SCOTLAND BRANCH, PHAR-MACEUTICAL SOCIETY, Craig's restaurant, 142A St. Vincent Street, at 7.45 p.m. Mr. T. Reid (vice-president, Pharmaceutical Society) "Progress Report. A Review of the work of the Council."

LONDON UNIVERSITY, Post-graduate medical school, Ducane Road, London, W.12, at 2 p.m. Professor C. H. Gray on "Liver Function Tests.'

MANCHESTER BRANCH, PHARMACEUTICAL SOCIETY, Plaza ballroom, at 7.30 p.m. Benevolent Fund charity ball.

NORTH STAFFS BRANCH, PHARMACEUTICAL SOCIETY, Crewe Arms hotel, Crewe, at 8 p.m. Dinner.

PHARMACEUTICAL SOCIETY OF GREAT BRITAIN, 17 Bloomsbury Square, London, W.C.1, at 7,30 p.m. Dr. A. M. Cook (University of London, School of Pharmacy) on "The Evaluation of Disinfectants and Preservatives."

STIRLING AND CENTRAL SCOTTISH BRANCH, PHAR-MACEUTICAL SOCIETY, Golden Lion hotel, at 7.30 p.m. Dinner.

SWANSEA AND WEST GLAMORGAN BRANCH, PHAR-MACEUTICAL SOCIETY, Mackworth hotel, at 7.45 p.m. Talk and film show.

THAMES VALLEY PHARMACISTS' ASSOCIATION BRANCH, PHARMACEUTICAL SOCIETY, Griffin hotel, Market Place, Kingston-upon-Thames, at 7.30 p.m. Supper-dance.

TUNBRIDGE WELLS BRANCH, PHARMACEUTICAL SO-CIETY, Crescent Road, at 2 p.m. Coach, calling at Crowborough, 2.20 p.m., visit to Queen Victoria hospital, East Grinstead.

ASSOCIATION BRANCH, PHARMACISTS' PHARMACEUTICAL SOCIETY, 21 Portman Square, London, W.1, at 7.30 p.m. Dr. E. W. Tapley (Roussell Laboratories, Ltd.) on "Some Aspects of Corticotherapy."

Thursday, October 15

CHEMICAL SOCIETY, Burlington house, Piccadilly,

London, W.1, at 7.30 p.m. Professor E. A. Guggenheim on "Niels Bjerrum Memorial Lecture,'

DUNDEE AND EASTERN SCOTTISH BRANCH, PHARMA-CEUTICAL SOCIETY, Royal hotel, at 7.30 p.m. Mr. G. H. Hughes (President of the Pharmaceutical Society) on "Looking Ahead."

HOUNSLOW BRANCH, PHARMACEUTICAL SOCIETY,

Sun hotel, Hanworth Road, at 8 p.m. Mr. A. Herzka on "The Growing Importance of Pressurised Packaging (Aerosols)."

NORTHERN SCOTTISH BRANCH, PHARMACEUTICAL SO-CIETY, Royal hotel, Inverness, at 8 p.m. Mr. I. Macdonald (A. C. Nielsen & Co., Ltd.) on Factors in Successful Retail Business.

PHARMACEUTICAL GROUP, FRIENDS OF THE HEBREW UNIVERSITY, Cora hotel, Upper Woburn Place, London, W.C.1, at 7.45 p.m. The Hon. Edwin Samuel on "Economic Aspects of Industry in Israel."

SOCIETY OF CHEMICAL INDUSTRY, 14 Belg ave Square, London, S.W.1, at 2 p.m. Joint meeting with Iron and Steel Institute, on "Corrocion '

Friday, October 16

EDINBURGH AND SOUTH-EASTERN SCOTTISH BRANCH, PHARMACEUTICAL SOCIETY, 36 York Place, at 8 p.m. Dr. G. R. Boyes on "Some Side Effects of Drugs."

LONDON SECTION, ROYAL INSTITUTE OF CHEMIS-TRY, St. Ermin's hotel, Caxton Street, London, S.W.1, at 7.30 p.m. Dinner dance.

Saturday, October 17

NATIONAL PHARMACEUTICAL UNION, Lion hotel, Shrewsbury, at 8,30 p.m. Special area meeting dinner. Conference Sunday.

BRIGHTON: Mr. E. A. Jensen (not E. A. Jackson) is among the lecturers taking part in the current evening course on "Economics in Retail Pharmacy" (see C. & D., September 26, p. 250).

C. & D. WEEKLY LIST OF PRICES

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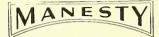
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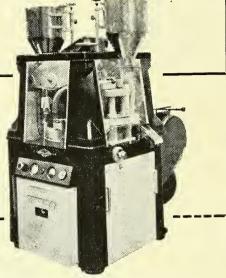
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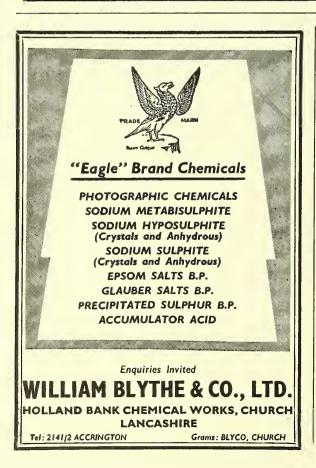
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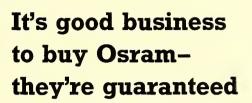
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POWER RD., CHISWICK, W.4 · BARROWS LANE, STEETON, KEIGHLEY, YORKS.

you can depend on "DPL" to make your tablets

B.P.

B.P.C.

N.F.

TABLETS TO YOUR OWN FORMULA



for ground gums

AGAGIA TRAGACANTH KARAYA

The texture and consistency of a product depends very largely on the choice of gum used in its manufacture. As leading millers of Natural Gums, StaffordAllenS carry a wide range of different grades and types of gum and are pleased to advise on the correct gum to meet your requirement.

StaffordAllenS' gums are rigidly tested and controlled for mucilage uniformity, fineness, colour, etc. Continuity of quality is assured.

Chemists looking for More Customers look for WARERITE Surfaces*

Brighten up your shop, and save work and costs by fitting warefite surfaces. On counters and partitions, on doors and cash desks or for hygienic easy-to-clean wall panelling, these colourful decorative surfaces create an air of enterprise, cleanliness and contemporary ideas. Warefite surfaces remain new-looking with no maintenance costs! Talk to your builder or shopfitter about the two forms of warefite and ask to see the full range of patterns and colours.



- * WARERITE wallboard—designed for all vertical surfaces and ceilings—easy to install using plastics or metal fixing sections or pinned to timber framework.
- * WARERITE veneers—ideal for table and counter tops and provide the very best hard-wearing surfaces.

 WARERITE materials are in stock in your district. Write to Bakelite Limited for the name and address of your local stockist.

WARERITE

with the lovelier patterns



QUALITY IN RECTANGULAR TABLET BOTTLES



First Class in GLASS

Available in

Nos. 1, 2, 3, 4, 5 and 6 sizes

Recommended packs:

No. I Size

No. 2 Size

No. 4 Size

No. 6 Size

20 Aspirin Tablets

25 Aspirin Tablets or
25 Codeine Tablets

100 Aspirin Tablets or
50 Codeine Tablets

We supply White Enamelled Tinplate, Satin Finish Aluminium and Black Plastic Screw Caps (all having Waxed Wood pulp Liners) to fit these Bottles.

NATIONAL GLASS WORKS (YORK) LTD.

FISHERGATE, YORK. Tel. YORK 23021
ALSO AT: CAROLINE HOUSE, 55-57 HIGH HOLBORN,
LONDON, W.C.I. Tel. HOLBORN 2146

PROMPT DELIVERY FROM STOCK

Packed in easily handled cartons



WHOLESALE ONLY

BOOTS' 365 TALCUM

filled by ALBRO

Yet another important organisation selects ALBRO machines for high output.

The ALBRO 2-head powder-filler illustrated here is being used by Messrs. Boots Ltd. to fill their 365 Talcum Powder.

Operated by unskilled labour, this machine can fill bottles, tins, cartons or drums of up to $l\frac{1}{2}$ lb. capacity at speeds of up to 3,600 per hour, depending on the size of container.

The exclusive vacuum operation ensures completely dustless filling—is so efficient that specially reduced insurance rates are obtainable when powders of a deleterious or abrasive nature are filled.

Other models are available with outputs of up to 7,200 containers per hour.

Ask for details or a demonstration.



ALBRO Filling Machines

for Liquids, Powders & Pastes

ALBRO FILLERS & ENGINEERING CO. LTD., WHARF ROAD, PONDERS END, MIDDLESEX

Telephone: Howard 2622 (5 lines) Telegrams: Albromach, Enfield





THE ORIGINAL POLYTHENE FEEDING BOTTLES

Hygienic, tasteless, odouriess, unaffected by foodstuffs. Standard valves and teats fit narrow neck and boat-shape bottles. Sterilizing instructions with each bottle.

Obtainable from your usual Wholesaler



IST DUKES ROAD, LONDON, W.3

By far the best value for this type of product

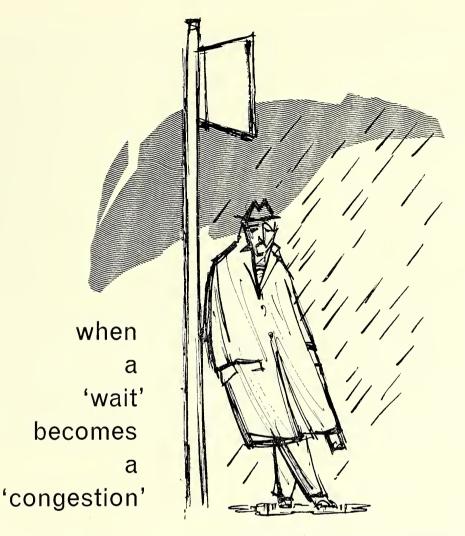


Boat-shaped Feeding Bottle RETAIL 2/8



Dual Purpose Feeding Bottle with No-germ Cap 4'4

JACW/CD/4



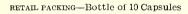
When winter is back with a vengeance, you can expect a throng of people in your shop with 'cold spell' symptoms . . . and prescriptions for KARVOL.

Soothing decongestant KARVOL is the simplest, most effective treatment for upper respiratory tract congestion.

KARVOL is easily expressed into hot water or onto handkerchief, pyjamas or pillow without fear of staining.

The handy one-dose capsules fit easily into pocket or handbag . . . provide instant relief anywhere, night or day.

Check your stocks now! They'll be wanted.

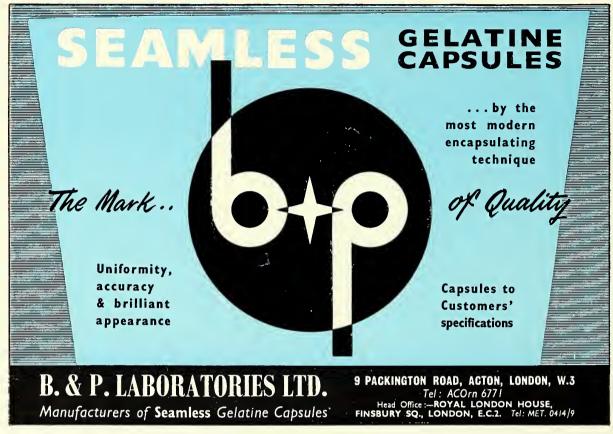


GENEROUS BONUS TERMS

13 to the dozen on 2 dozen (minimum)
14 to the dozen on 6 dozen (minimum)
on direct orders from retail pharmacists only.







Samples and literature on request

BAUMOL SOAP







brings you profit—25 per cent: you pay 2s. 6d. for a box of 3 tablets and you sell it for 3s. $1\frac{1}{2}$ d. (plus $7\frac{1}{2}$ d. tax) BAUMOL SOAP brings you professional satisfaction: Duncan Flockhart, well-known to you all your professional life, have sold this soap through pharmacists for about sixty years—mostly on personal recommendation and entirely without 'ballyhoo'.

It says much for its quality,

for the co-operation of pharmacists and for the discrimination of a large section of the community that the sales of Baumol Soap continue to increase.

Your wholesaler carries stocks.

A discreet yet telling showcard is available.

DUNCAN, FLOCKHART & CO LTD · EDINBURGH

Special November bonus in your New Kotex sales!



4½ million women will receive this coupon next month

This coupon will appear in New Kotex advertisements in the November issues of: WOMAN, WOMAN'S REALM

THE OFFER IS OPEN UNTIL DECEMBER 20 ONLY—TELLS WOMEN TO BRING THEIR COUPON TO YOU—THE RETAILER!

Take full advantage of this mass coupon distribution -

ORDER NEW KOTEX • DISPLAY NEW KOTEX

Order from your wholesaler or direct from

KIMBERLY - CLARK LIMITED, LARKFIELD, KENT *Regd. T.M.



OXYGEN THERAPY SETS
ON EC 10 PRESCRIPTION

Weight $2\frac{1}{2}$ lb.

Overall Height $5\frac{1}{2}$ ins.

Max. Width $4\frac{1}{2}$ ins.

Flow rates 2 and 4 litres /min.

Max. Inlet Pressure
1980 p.s.i.

Ambient Temperature
Range — 10° C to $+50^{\circ}$ C

Outlet connection
suitable for standard bayonet connector

FOR USE IN THE HOME

The Normalair Type C890 Domiciliary Oxygen Flow Selector is approved by the Ministry of Health for use at home and is included in the drug tariff.

Fool-proof and easily attached without tools to any standard oxygen cylinder, the Normalair C.890 provides an accurately-controlled and metered oxygen supply at 2 or 4 litres a minute.

The flow rate selected by simply turning a clearly marked knob is automatically maintained from 1980 p.s.i. to 30 p.s.i. and no re-adjustment is needed as cylinder pressure falls during use.

Full details are available in Leaflet C.890.

Designed and manufactured by

NORMALAIR

LTD

YEOVIL ENGLAND

INDUSTRIAL DIVISION 27/31 MINSHULL ST. MANCHESTER 1. Telephone: CENTRAL 3/1/1

Fighting "MANAGEMENT FATIGUE" means BUSINESS

There will be many among your customers, holding responsible positions in all walks of life, whose lives are overshadowed by the lowered state of mind and body now known as "management fatigue". This, the legacy of tension, overwork, snatched and ill-balanced meals, is a major problem of today. But just as 20th-century conditions combine to create it, 20th-century science has evolved, in OKASA, the means to solve this problem.

As befits a modern tonic, specifically designed for busy

people, OKASA is prepared in tablet form. Its ingredients are most carefully combined to provide a comprehensive treatment—to strengthen not merely a part, but the whole of the human constitution. By virtue of its new composition, OKASA also qualifies as a geriatric product of the highest order. To people seeking vigorous enjoyment of their later years, as well as to people of all ages living under pressure, OKASA will be of vital and immediate interest.

OKASA the 20th-Gentury Tonic

STANDARD SIZE (100 TABLETS) 24/6
(To the Chemist 16/4)
TRIAL SIZE (50 TABLETS) 14/9

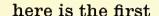
TRIAL SIZE (50 TABLETS) 14/9
(To the Chemist 11/2)

OKASA is prepared by Hormo-Pharma Ltd. London, and is obtainable from the sole distributors for the U.K.

ROBERTS CHEMISTS (Bond St.) LTD. 76 New Bond St. London, W.1. Tel: MAY 4173

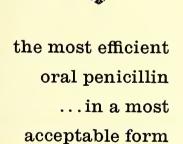


NOODSHIP OF THE PARTY OF THE PA



READY-PREPARED Suspension

of potassium penicillin V



It's logical enough that the pioneers of Britain's penicillin V should be first again with another important penicillin development. For important indeed—to doctor and pharmacist alike—is the new 'Distaquaine' V-K Suspension. It is Britain's first ready-prepared suspension of potassium penicillin V, and can be dispensed without any preliminaries. It is pleasant-tasting, too, and is suitable for patients of every age. That's why you'll be seeing more and more prescriptions for . . .



SUSPENSION

'Distaquaine' V-K

(POTASSIUM PENICILLIN V)

125 mg. per 5 ml. in bottles of 60 ml. (approx. 2 fl. oz.). Trade Price—8s. 10d.

DC(B)L

THE DISTILLERS COMPANY (Biochemicals) LIMITED

BROADWAY HOUSE, THE BROADWAY, WIMBLEDON, LONDON, S.W.19 Telephone: LIBerty 6600





gives this carefree protection

No wishful thinking this! The demand for Cosette Sanitary Protection has been phenomenal - sales have rocketed 600% in the last twelve months! Now comes a new product, new packs, and new non-stop national advertising to give sales yet another merry whirl. Cosette Briefs — they just won't stop selling. So don't, don't stop ordering.

Have you ordered enough?



The original No-Belt briefs, quick drying nylon, waterproof gusses with pockets. 3 sizes 9/11 a pair



As original briefs but in rayon 3 sizes 6/11 a pair



to display, so convenient to handle.



NEW!De-Luxe permanently perfuned briefs in nylon, reinforced back and front, 3 sizes 12/3 a pair

Available from your usual wholesaler

or direct from us

Write for details to COSETTE LTD 45 Beauchamp Place, London, S.W.3



FOR

* YOU ***YOUR** CUSTOMER

COLOUR CRÈME

New and exciting! Rich creme in a tube that conditions as it tints. Easy and pleasant to apply and absolutely permanent.

Wholesale 3/4 + P.T. Retail 6/8.

Chemists' Profit 1/8

INECTO RAPID

Has a 40-year reputation as the world's supreme recolourative. Known and asked for by name. It sells and sells and sells.

Wholesale 2/6 + P.T. Retail 5/-

Chemists' Profit 1/3

"HAIR MAGIC"

The fastest selling semi-permanent colouring of all with a 5-minute self-timing colour control. Pure Ash, true Reds, soft, subtle Golds and rich deep or light Browns-Brown, Ashen Brown, Chestnut Brown. And now-Deep Black

Wholesale 1/8 + P.T. Retail 3/10.

Chemists' Profit 1/4

INECTO

THE PERFECT HAIR COLOURING

INECTO HOUSE 27 DOVER STREET, LONDON, W.1. HYDe Park 7541

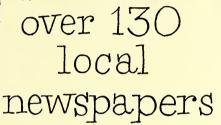
"The most experienced and largest manufacturers of hair colouring in the world'

CFH/IN9/34





ADVERTISING



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television transmitters

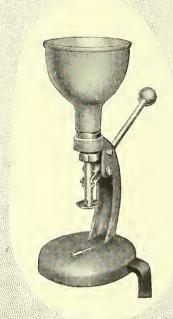
seven national newspapers

womens press and Radio Times

it all adds
up to millions of
customer impacts

SQEZY

ALREADY AHEAD-SOON UNBEATABLE!



profits up... ...costs down

Here is your chance to make up your own products by using the

LABORATORY **EMULSIFIER**

Strong and well designed this emulsifier will pay for itself many times over

£8.12.6d.

SHAWCLOUGH, ROCHDALE phone: Rochdale 49321 grams: Homogeniser Rochdale



PRESCRIPTION BOTTLES

require top grade cork stoppers which permit no leakage.

Chemists who know from experience, continually specify Robinson Corks - the tirst class quality never varies.

Write for full details and prices to:-



21 HORTON STREET · HALIFAX London Address: 54-62, Regent Street. London, W.1. Tel: GER 3965/8



More customers are asking or both these delicious, health-giving drinks. Meet the extra demand by ordering ample stocks NOW and make sure of year-round profits.

BARNETT & FOSTER LTD.

QUEENSBRIDGE ROAD, LONDON, E.S.

C, essential to good health

Tel.: CLissold 7132

New streamlined hygienic pack smooth shouldered, seamless, and with overall flush fitting plastic stacking cap.



FORMULA

Triethylene Glycol 3.35 Menthol 1.02 Thymol 0.15 Camphor 0.41 Ol. Eucalyptus 1.01 Benzalkonium Chloride 0.40 Bornyl Acetate 0.11 Linalyl Acetate 0.10 Solvents | Propellants ad 100.



cold relief A New product with New 3

Max Press Button Cold Relief is a new formulation compounded ...

To give instant relief to nasal congestion caused by colds

and

To kill airborne bacteria including influenza viruses

and

To reduce risk of 'infection-spread' in homes and offices

Backed by powerful advertising

GENEROUS TRADE TERMS

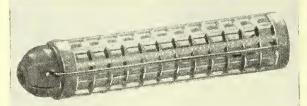
PHONE YOUR WHOLESALER



Mondart Ltd 49 PARK LANE, LONDON, W.1

NOVELTY HAIR ROLLER 'FABULO' BRAND

also in Xmas pack available from Oct. 15



The world's best and cheapest UNBREAKABLE (polythene) HAIR ROLLER or CURLER in 2 sizes for professional use by Hairdressers, for use with Home Perms or simply by damping the hair.

Price 15/10 per doz packets of either + 25% P.T. Min. Retail Price 2/5 per packet of either size

Supplies obtainable through the wholesale trade or direct from:

HAETAM LTD.

63 Corporation St., Manchester 4
Telephone: Blackfriars 3882

Wholesolers who do not yet stock these renowned Curlers please contoct us for trode terms.

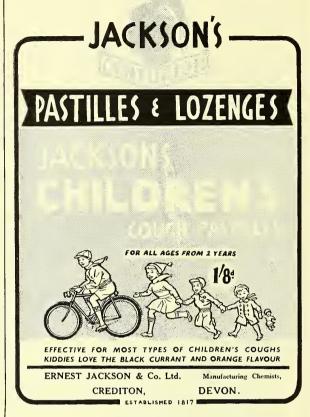


Your customers are catching on to the ROZALEX habit—are you?

An intriguing campaign for Rozalex barrier creams is appearing in the women's magazines. It's to remind women to make a habit of using these barrier creams regularly. Link up with these advertisements by displays—and how are your stocks of No. 1 cream for dry work, No. 8 cream for wet work?

Supplied direct or through your usual wholesaler.

ROZALEX LTD., 10 NORFOLK ST., MANCHESTER 2



ILODERM

a unique self-sterile Ointment that compares with no other in the treatment of:—

- BURNS .
- BEDSORES .
- IMPETIGO .
- NAPKIN RASH
 - DERMATITIS .
- CRACKED NIPPLES .

ask your usual wholesale House for supplies

ILON LABORATORIES

LORNE STREET, HAMILTON, LANARKSHIRE

Now available for general clinical use LAEVULOSE (fructose)

presented as:

LAEVOSAN

INTRAVENOUS

ORAL

HALVORAL

LAEVULOSE has many advantages over glucose as a carbohydrate supportive therapy in conditions of metabolic stress. Owing to new and more economical methods of processing, this useful carbohydrate is now available for general clinical use as sterile pyrogen-free solutions for intravenous injections and as a concentrate of 65% for oral administration.

The Fundamentals of Laevulose Therapy

LAEVULOSE enters the energy releasing system more directly than glucose and is metabolized independently of insulin.

The liver synthesizes 35-40% of glycogen from LAEVULOSE, but only 12% from glucose.

The severely damaged liver is still capable of utilizing LAEVULOSE when it can no longer utilize glucose.

LAEVULOSE has a protein-sparing action in cases of traumatic shock or severe infection. High concentrations of LAEVULOSE may be injected with little risk of vein damage.

INDICATIONS

Traumatic shock, acute and chronic hepatitis, toxaemias of pregnancy, irradiation sickness.

PRESENTATION LAEVOSAN

Sterile pyrogen-free laevulose solutions for intravenous injections.

Boxes containing:-

5 ampoules 10 mils 20% solution, trade price 7s. ex. P.T.

5 ampoules 10 mils 40% solution, trade price 8s. 6d. ex. P.T.

LAEVORAL

Bottles containing 10 fl. ozs.

Laevulose concentrate 65% for oral use, trade price 11s. 6d. + 2s. 10½d. P.T.

Bottles containing 40 fl. ozs. (DISPENSING PACK) laevulose concentrate 65% for oral use, trade price 41s. 3d. ex. P.T.





CALMIC LIMITED

CREWE, CHESHIRE. Tel. CREWE 3251/7 London, 2 Mansfield St., W.1. Tel. LANgham 8038/9





for fine chemicals especially:

ASPIRIN B.P. "FRE-FLO"
SALICYLIC ACID B.P.
SODIUM SALICYLATE B.P.

SALOL B.P.C.
VANILLIN 100%

H. W. GRAESSER-THOMAS LIMITED

49 LEADENHALL STREET, LONDON, E.C.3

TELEPHONES: ROYAL 3011-6111

PRIDE 7^D NEW DOUBLE SHAMPOO SACHETS

BEER SHAMPOO

a special Blend for BRUNETTES which helps to attain that much sought after high gloss so necessary with either natural or tinted BLACK hairs.

CHAMPAGNE SHAMPOO

Is specially packed for those who desire the invigorating effect of wine and spirit with a lovely FRENCH PERFUME.

MEDICATED SHAMPOO

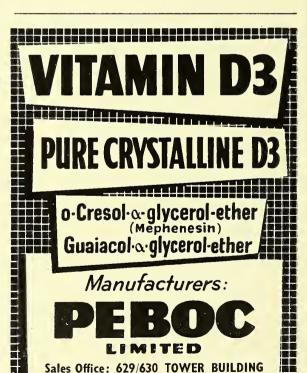
a hair health shampoo free of all harsh antiseptics. Based entirely on the Pure Natural Oils of the Pine and Ti-Trees is delightful to use and assures a clean healthy scalp.

These three shampoos are in double sachets giving sufficient for 2 complete shampoos. Smart and colourful pack.

Price 3/10 doz. plus 11½d. P.T. retail 7d. each.

From May, Roberts, Sangers or your usual wholesaler or direct

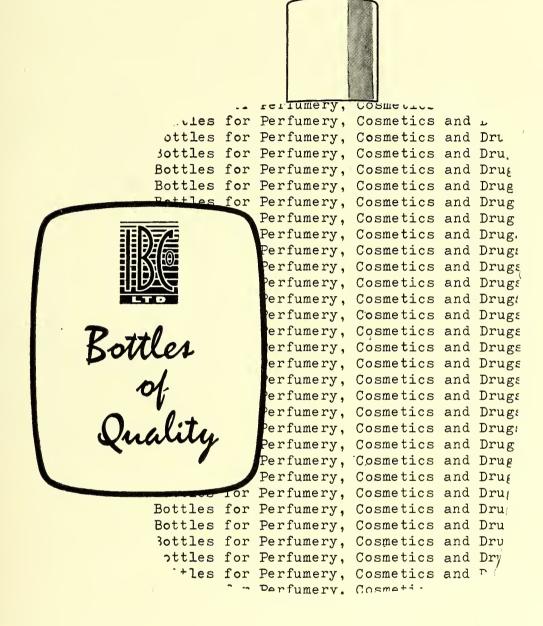
B. N. FURMAN (Productions) LTD., 133 Fonthill Road, N.4



LIVERPOOL 3 · ENGLAND

Laboratories:

NORTHOLT, MIDDLESEX



Designers and Manufacturers of High Quality Glassware

THE INTERNATIONAL BOTTLE CO., LTD.

140 PARK LANE W.I Telephone MAYfair 6992 (5 lines) Telegrams AUTREFOIS, AUDLEY, LONDON

for ASTHMA and Allied Chest Complaints, you can safely recommend —

RIDDOVYDRIN ASTHMA

—A BIOLOGICAL PREPARATION CONTAINING VITAMIN C

RIDDOVYDRIN gives Rapid and Prolonged Relief to the most Chronic Cases.

SAMPLES AND LITERATURE FREE ON REQUEST

TOGETHER WITH ----

RIDDOPAG

WITH OR WITHOUT MASK

- UNBREAKABLE -

Gives a Fine Dry Vapour Free of Drops MAY BE SUPPLIED ON E.C.10 FORMS

40°/ DISCOUNT ALLOWED ON ALL INHALERS RETAILING FROM 9/6d. TO 58/6 TAX FREE



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Phone: SHOreditch 7254/6

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Phone: BLA. 2894



Malt and Cod Liver Oil

With the flavour that CANNOT be copied

We are the premier firm supplying Chemists "own name" packs

IMPORTANT

Make sure of your stocks against the possibility of severe Winter epidemics.

LER & COMPANY LIMITED, LEYLAND MILLS WIGAN

GALLIC ACID PYROGALLIC ACID

(RESUBLIMED, PURE CRYSTAL AND TECHNICAL)

WHOLESALE AND EXPORT ONLY

THE BRITISH DYEWOOD CO. LTD., 19 ST. VINCENT PLACE, GLASGOW, C.I.



FREE ELECTRIC BLANKETS TO BE WON IN THE



ELECTRIC BLANKET

"SWEET DREAMS"

COMPETITION

-and your customers win your share for you

All they do is put Dreamland's special features in the order they think best—there's an entry form packed with every Dreamland Blanket you sell!

Every week for 22 weeks 100's of fff's worth of standard single size Dreamland blankets will be given as prizes—from September 28th on!

Every pair of Dreamland blankets one of your customers wins will bring you a pair of blankets — that's over £2,500 worth of free stock for retailers!

Yes, 22 whole weeks of Big Prizes—for you and your customers—in the Dreamland "Sweet Dreams" Competition—all backed up by Deamland's biggest-ever National Advertising Campaign.

TV ADVERTISING on all networks

-60-second participations
In the popular Advertising Magazines,
reaching over 7,500,000 homes

PRESS ADVERTISING

 big spaces in the magazines that command the women's market, reaching almost 5,000,000 women

-AND HERE'S STILL MORE GOOD NEWS!

5% EXTRA DISCOUNT

ON ALL DREAMLAND ORDERS. Yes on all orders: so send yours to your usual Wholesaler as early as possible. And with your first stock of Dreamland — the super-size blankets that warm the whole bed — will come a special Showcard to link your shop with the easy-to-enter "Sweet Dreams" Competition.

EASIPOWER APPLIANCES LIMITED . 30 HIGH STREET . SOUTHAMPTON . HANTS . TEL: 27947/8



Quinine Sulphate B.P. 1953 & 1932



THE BRITISH
DYEWOOD COMPANY LTD.
19 St. Vincent Place,
Glasgow, C.1.





Display Victory V on your counter!









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Specially spaced Advertisements, including:—Public and Legal Notices, Sale by Auction, Appointments, Contract Work, Patents, Partnerships, 18/- per 1/2 inch minimum and pro rata. Box 2/-. Clearances and Wants, Businesses for Disposal and Wanted, Premises, Agents Wanted, Agencies Wanted, Miscellaneous, 17/6 for 36 words minimum; then 4d. per word. Box 2/-. Situations Wanted, 3/- for 18 words minimum: then 2d. per word. Box 1/-.

ORRIDGE & COMPANY

184 STRAND, W.C.2 Tel: TEMple Bar 9212/3 & 6340

CHEMIST BUSINESS TRANSFER AGENTS AND VALUERS WHOLESALE AND RETAIL BRANCHES: BIRMINGHAM . SOUTHAMPTON . LIVERPOOL . SHEFFIELD . CARDIFF

PREMISES TO LET

EXPANDING TOWN near London. Included in L.C.C. overspill scheme. Newly built shop offering excellent opportunity for chemist. Adjoining multiple food traders. Write Box CD.272, c/o 191 Gresham House, E.C.2.
C 9740

KENNINGTON, 11,700 sq. ft. Mainly ground-floor factory with smaller first and second floors. Main-road frontage and rear access for vehicles. Suit rough trades. Rent £3,500 p.a. excl. Chamberlain & Willows, 23 Moorgate, E.C.2. (Met 8001.)

SOUTH BUCKS, newly converted shop premises with self-contained flat over in busy and growing area to be let to pharmacist on seven, fourteen, twenty-one years' lease. Rent £400 per annum exclusive. For further particulars apply Box C 2436.

PREMISES WANTED

MODERN WAREHOUSES and distribution depôts, 20,000 sq. ft. in S.E. and S.W. London by well-known firm of multiple grocers for distribution to those parts of London. Singlestorey premises preferred, Good loading facilities greatist and clear entrances for vehicles. storey premises preferred, Good loading facilities essential and clear entrances for vehicles. Rent or purchase. Modern single-storey factory 10,000 to 15,000 sq. ft, S.W. London or Surrey. To purchase or rent by clectrical engineers. Chamberlain & Willows, 23 Moorgate, E.C.2. (Met 8001.)

APPOINTMENTS

KINGSTON HOSPITAL WOLVERTON AVENUÉ, KINGSTON-ON-THAMES

Locum Pharmacist
required immediately. Salary £18 18s. per week
for three weeks or £16 16s. per week for a
longer period. Applications to Physician Superintendent to the Hospital. C 483

LAMBETH HOSPITAL, **BROOK DRIVE, S.E.11** (Acute General—501 beds)

Assistant-in-Dispensing required. Whitley Council rates, Applications, stating age, experience and names of two referees to the Secretary.

ALTON GROUP HOSPITAL

MANAGEMENT COMMITTEE

Assistant-in-Dispensing
required with Apothecaries' Hall Certificate (preferably with hospital experience) for Group
Pharmacy at Lord Mayor Treloar Hospital,

Alton, Salary at age 22 £415 rising to a maximum of £530. Applications stating age and experience together with the names and addresses of two referees to the Group Secretary, Lord Mayor Treloar Orthopædic Hospital, Alton, Hants,

BLACKBURN & DISTRICT HOSPITAL MANAGEMENT COMMITTEE

Senior Pharmacist (new post) required at ROYAL INFIRMARY, BLACKBURN. Large modern department providing pharmaceutical services to group of hospitals. Whitley Council salary £675—£865 ncr annum

per annum.
Applications, stating details of qualifications, experience and names of two referees to Group Secretary, H.M.C. Office, Royal Infirmary.
C 9758

GODALMING, MILFORD AND LIPHOOK GROUP HOSPITAL

LIPHOOK GROUP HOSPITAL MANAGEMENT COMMITTEE
Assistant-in-Dispensing
required for King George V and Milford Chest
Hospitals. Salary: £215 per annum at age 18,
rising to £510, with additional £20 for certain
qualifications. Accommodation and full board
available for single person at a charge of £160
per annum. Superannuable post. Apply to
Group Secretary, Milford Chest Hospital,
Godalming, Surrey, by not later than October
17, 1959. C 9744

GODALMING, MILFORD AND LIPHOOK GROUP HOSPITAL

LIPHOOK GROUP HOSPITAL MANAGEMENT COMMITTEE Pharmacist required for King George V and Milford Chest Hospitals, Salary and conditions of service in accordance with Whitley Council scales:—£605 to £815 per annum. Accommodation and full board available for single person at a charge of £205 per annum. Applications, stating age, qualifications and experience, together with names of three referees, to Group Secretary, Milford Chest Hospital, Godalming, Surrey, by not later than October 17, 1959. C 9745

METROPOLITAN HOSPITAL, KINGSLAND ROAD, LONDON, E.8 Locum Pharmacist

required work in a modern department. Apply to Hospital Secretary.

QUEEN CHARLOTTE'S MATERNITY HOSPITAL Pharmacist

Pharmacist
Applications are invited for the above post. Salary and conditions of service in accordance with Whitley Council regulations. Enquiries to the Chief Pharmacist and applications giving details of age, qualifications and experience together with the names of two referees to the House Governor, 339 Goldhawk Road, London, W.6, within ten days.

C 9742

ROYAL FREE HOSPITAL
Locum Pharmacist
required from October 19 to October 31. Salary
£18 18s. per week, Applications with names of
two referees should be addressed to the Group Chief Pharmacist, Royal Free Hospital, Gray's Inn Road, W.C.1. C 9736

ST. GEORGE'S HOSPITAL
TEACHING GROUP
Assistant-in-Dispensing
required for duties within the Group but mainly
at St. George's Hospital (Grove Hospital),
Tooting Grove, London, S.W.17. Salary according to age, in accordance with Whitley Council
scale, at 22 £395 per annum, rising to a maximum of £510 per annum plus London Weighting and, if eligible, an additional allowance of
£20. Applications stating age and experience
and the names of two referees to the Chief
Pharmacist, St. George's Hospital, Hyde Park
Corner, S.W.1. C 9746

ST. OLAVE'S HOSPITAL,

LOWER ROAD,
ROTHERHITHE, S.E.16
Assistant-in-Dispensing
Required in Pharmaceutical Department for varied duties. Salary up to £560 per annum including London weighting, and additional payment of £20 per annum for suitable qualifications. Apply giving names of two referees to the Chief Pharmacist, telephone Bermondsey 4311.

ERNEST J. GEORGE & CO.

329 HIGH HOLBORN, LONDON, W.C.1.

Telephone: HOLBORN 7406/7

Professional Valuers to the Pharmaceutical Trade.—Wholesale, Retail and Hospital Stocks, Branches throughout England and Scotland.

Appointments—Continued

ROYAL FREE HOSPITAL

Applications are invited for the post of Pharmacist Applications are invited for the post of Pharmacist at this Hospital. Salary in accordance with the Whitley Council scale with extra pay for evening elinics. Applications, with names of two referees, should be addressed to the Chief Pharmacist, Royal Free Hospital, Gray's Inn Road, W.C.1.

SOUTH LONDON HOSPITAL FOR WOMEN AND CHILDREN, CLAPHAM COMMON, S.W.4

(Acute General, 254 beds)

Senior Pharmacist required. Applications stating age, qualifications, experience and names of two referees to the

SEAMEN'S HOSPITALS MANAGEMENT COMMITTEE

MANAGEMENT COMMITTEE
Pharmacist
required for duties under Chief Pharmacist at
Dreadnought Hospital, Greenwich. Salary and
conditions of service in accordance with Whitley
Council regulations. Staff flat available if required. Applications stating age, qualifications
and experience, together with the names and
addresses of two referees, to be sent to the
Group Secretary, Dreadnought Seamen's Hospital; Greenwich, S.E.10. C 9764

ST. GILES' HOSPITAL, CAMBERWELL, S.E.5

Pharmacist
required at above hospital, (343 acute general beds). Whitley Council salary and conditions. Applications to Group Secretary, Camberwell H.M.C., Dulwich Hospital, East Dulwich Grove, S.E.22, or enquiries direct to Chief Pharmacist, St. Giles' Hospital.

STEPNEY GROUP HOSPITAL MANAGEMENT COMMITTEE, MILE END HOSPITAL, BANCROFT ROAD, LONDON, E.1 Deputy Chief Pharmacist

Deputy Chief Pharmacist
Applications are invited for the post of Deputy
Chief Pharmacist (Category IV). Salary scale
£700 p.a. by annual increments to maximum of
£945 p.a. plus London Weighting. Whitley
Council conditions of service, Further particulars may be obtained from the Chief Pharmacist (Tel.: Advance 2873). Applications stating
age, qualifications, experience and the names
of two referees, to be sent to the Group Secretary at above address. C 9760

ST. LAWRENCE'S (MENTAL DEFICIENCY) HOSPITAL, CATERHAM, SURREY Chief Pharmacist (Category II)

Chief Pharmacist (Category II)
Applications are invited for the above position.
The hospital, situated in pleasant surroundings, accommodates 2,250 patients; hospital experience desirable. Residential accommodation available for single person. Salary scale £755—£1,030 per annum, plus £25 per annum if in possession of approved higher qualification. Pharmaceutical Whitley Council conditions of service. Superannuable.
Applications stating are qualifications and expensive processing the property of the property of the processing stating are qualifications.

Superannuable.

Applications stating age, qualifications and experience, together with the names of two referces, to Group Secretary immediately.

C 9747

ST. OLAVE'S HOSPITAL, LOWER ROAD, ROTHERHITHE, S.E.16

KUIHEKHIIHE, S.E.16
Senior Pharmacist
Applications are invited for appointment at the above hospital. Salary up to £895 per annum including London weighting. Applications stating age, qualifications and experience and giving the names of two referees to the Hospital Secretary.

WEST MIDDLESEX HOSPITAL,

ISLEWORTH, MIDDLESEX

Assistant-in-Dispensing
required in Pharmaceutical Department for varied duties. Salary £395 per annum at age 22, rising to £510, plus London Weighting (additional payment of £20 per annum for suitable qualifications).

Apply giving names of two referees to the Chief Pharmacist. C 480

WESTMINSTER HOSPITAL
TEACHING GROUP,
LONDON, S.W.1
Deputy Chief Pharmacist

Applications are invited for the post of Deputy
Chief Pharmacist. Salary (Category IV) £700
rising to £945. Candidates should have experience, good personality and interest in technical
matters. Details of career and names of three
referees to House Governor by Saturday 24th
October, Preliminary enquiries to the Chief
Pharmacist.

NATIONAL HEALTH SERVICE APPOINTMENTS

NATIONAL HEALTH SERVICE JOINT PRICING COMMITTEE

FOR ENGLAND

Deputy Superintendent

Applications are invited for the post of Deputy Superintendent of the Harlow Pricing Bureau, Aylmer House, The High, Harlow, Essex.

The salary will be as laid down by the Whitley Councils for the Health Services.

Councils for the Health Services.
The successful applicant will be required to assist the Superintendent in resolving problems arising in the pricing of National Health Service prescriptions and in controlling staff. A knowledge of Pharmacy is desirable and Administrative experience would be an advantage. Applications stating age, qualifications, and experience together with names of three referees should be sent to the Clerk, Joint Pricing Committee for England, 38 Northumberland Street, Newcastle-upon-Tyne, 1, before 24th October, 1959.
38 Northumberland Street.

38 Northumberland Street, Newcastle-upon-Tyne, 1. 2nd October, 1959. C 9753

PROFESSIONAL SERVICES

WAX CONSULTANTS

The professional scrvices of experts in The professional services of experts in wax technology will shortly become available to industry at home and abroad. Limited number of commissions now being reserved. Reply in first instance to Box C 2446.

SITUATIONS VACANT RETAIL (HOME)

BLACKPOOL CO-OPERATIVE CHEMISTS, LTD., invite applications from Pharmacists (male or female) for position of Branch Manager. Superannuation scheme with transfer clause in operation. Salary based on scale and bonus not less than £1,004 per annum plus other emoluments, and offers scope for increase. Applications in writing, stating age, experience and present position to Superintendent Chemist, Sheppard Street, Blackpool.

branch manager/manageress Pharmacist required for suburban branch. Wages, plus emoluments, in excess of £1,000 per annum. Possibility of housing accommodation being arranged. Applications in writing to the Personnel Manager, Portsca Island Society, 110 Fratton Road, Portsmouth. BRANCH MANAGER PHARMACIST.

MUSSELBURGH (near Edinburgh), Manager required for old-established business, busy dispensary. Good supporting staff. Further particulars on application. Apply, Steedman, 106 North High Street, Musselburgh. C 2456

BIRMINGHAM. Pharmacist required for busy dispensary, lady or genileman, Rota. Salary £22 10s. Box C 2449.

FULLY EXPERIENCED male assistant required to take complete control of shop, staff, stock control, display, etc. Knowledge of dispensing an asset but not essential. Good salary plus commission on turnover offered to right man. Regret no accommodation but position is central and in main road contenient to most regrets of and in main road convenient to most parts of London. Write in first instance giving details of previous experience to Benjamin, 190 High Street, Stoke Newington, London, N.16. C 2454

NORTH LONDON SUBURB, Pharmacist required to run attractively equipped ultra mod-ern retail shop on partnership basis. No capital required. Unique opportunity for energetic ambitious person. Write in first instance with details of ability, etc. Box C 2452.

OLDHAM CO-OPERATIVE CHEMISTS, LTD., invite applications for the position of pharmacy branch manager, either sex. Modern accommodation available if necessary. Superannuation. Salary and other emoluments at least 4960. Applications stating age, experience, etc., to Oldham Co-operative Chemists, Ltd., King Street. Oldham.

PETERBOROUGH. Pharmacist required to supervise our main pharmacy. Inclusive salary to commence £1,150 per annum. Attractive house available at a reasonable rent. Pleasant locality. Excellent conditions of employment. Superannuation with transfer clause. Interview at our expense by appointment. Please forward usual details to Peterborough Co-operative Chemists, Ltd., Park Road, Peterborough.

C 2423

PHARMACIST required for part-time, hours to be arranged; would suit elderly lady or gentleman. No accommodation. South-west London area. Replies necessary. Box C 2439.

PHOTOGRAPHIC SALES ASSISTANT quired by Central London dealers. Good prects for keen, energetic man. Box C 2419.

LOCUMS WANTED

PETERBOROUGH. Locum Pharmacist required immediately for a period of two or three months to assist with dispensing in our main shop. Full supporting staff and congenial conditions. Good salary and expenses. Apply stating terms and references to Superintendent Chemist, Peterborough Co-operative Chemists, Ltd., Westgate, Peterborough. C 2424

WHOLESALE

WILLIAM FREEMAN & CO., LTD., have vacancies for experienced Representatives in the following areas:

- Middlesex and London Postal Districts, except S.E. and S.W. North Wales, Liverpool, the Wir-ral, West Lancashire and South Westmorland.

Remuneration by salary and commission and expenses, Car allowance. Superannuation.

Existing live connection handed over to suitable applicant, who must reside in territory and be a car owner.

Experience in calling on Wholesale and Retail Chemists and Hardware dealers an advantage.

Applications in writing to:

General Sales Manager,
Suba Seal Works,
Peel Street, Barnsley.

C 9748

LONDON COMPANY manufacturing and supplying Hospital equipment, surgical instruments, ctc., require experienced representative for well-established territory in Midlands area. Car supplied, expenses paid and good salary offered. Box C 9717. Situations Vacant—Continued

MANAGER

required tor

Packaging Factory

with staff of 150 in the Paddington

The position should preferably be held by a Pharmacist who is used to con-trolling staff and who has had some

trolling staff and who has had some packaging experience. Salary commensurate with experience. There is a Superannuation Fund and the Company operates Life Assurance and Profit Sharing Schemes. Write giving details of age, experience and salary required to Ref. EWP/HAC,

Personnel Manager, The British Drug Houses Ltd., Graham Street, London, N.1.

REPRESENTATIVE required by L'Oreal Hair Beauty Products to call on chemists and stores in the Midlands, This in an opportunity to join in the Midlands. This in an opportunity to join a rapidly expanding organisation. Applicants should live in the Birmingham area and must have good retail chemist connections. Salary, commission and expenses paid and car provided. Write in confidence, stating age and experience to Dept. C.D., Golden, Ltd., 7 Grosvenor Street, W.1.

NIPA LABORATORIES, LTD., have a vacancy for a Technical Sales Representative

to sell antioxidants, preservatives, etc., to the Food, Pharmaceutical and allied industries. Experience and contacts in these trades desirable. The position is permanent and offers excellent prospects. Please write giving full details of education and experience, also in-dicating salary required, to:—

Home Sales Director,
NIPA LABORATORIES, LTD.,
Roman Wall House,
1 Crutched Friars, London, E.C.3.

C 9743

Outstanding Opportunity

occurs for a

Pharmaceutical Chemist

with full knowledge of the Wholesale Distributive trade in the East Midlands. Rapid promotion with a view to possible directorship with a very oldestablished company. Replies in strictest confidence. Box C 9759.

PHARMACEUTICAL manufacturers, London area, have vacancies for 1. Sugar Coater, conversant with coloured work; 2, Experienced Tablet Maker. Apply giving details of career to Box C 9601.

REPRESENTATIVES (aged 23/35) required by REPRESENTATIVES (aged 23/35) required by a member of an important Group of Companies, to work in the following areas; (1) S.E. London and Kent; (2) Northern Home Counties, selling nationally advertised products to chemists, hardware and grocery wholesalers and retailers. Experienced men preferred. Applicants must be first-class salesmen, intelligent, energetic, ambitious and of good appearance. Prospects are excellent. Good salary and full expenses paid. Car provided, Non-contributory pension scheme, Own staff advised, Apply Box C 9757. Leading Danish pharmaceutical company offers first-class opportunity to a young

MEDICAL COPYWRITER

Steadily increasing expansion in English-speaking markets overseas has created an urgent need in our Publicity Department for a young medical copywriter to act as right-hand man to our English publicity manager. Preference will be given to applicants who are unmarried, aged 25-35, and with a medical, pharmaceutical, or scientific background. Some years' experience in the preparation of pharmaceutical literature will be considered a definite advantage. Knowledge of Danish is unnecessary, as all executives in the company, and all Publicity personnel, speak English. An excellent salary is envisaged for this post, and the successful applicant will have the opportunity of participating fully in every aspect of sales promotion, in a progressive and expanding pharmaceutical organisation.

Write, giving details of age, education and experience, to:

Publicity Manager, MECO-DUMEX LIMITED, 37 Prags Boulevard, Copenhagen S, DENMARK.

(Mark envelope "Confidential.")

C: 2457

SALES AGENT required in most areas for advertised and well-established pharmaceutical and toilet preparations. Excellent scope. Box C 2458.

SALES REPRESENTATIVE. Young man, 25/35, for developing sales of large medical glass container company. Primarily to operate in the London area. Preference will be given to a person who has already had previous experience of this work. Basic salary plus commission should bring earnings to £1,200 per annum. Apply Box C 2437.

TRAINEE/FITTERS. Opportunity to join a world-famous company for training in a progressive career. A pleasing personality, perseverance and a sympathetic approach to all matters concerning care of the feet are essential. A sincere interest in retail selling is also required. Energetic, well-spoken young men and women between 20 and 30, ready to undertake training in London for this responsible well-paid work, should apply with fullest possible details of career to date. Applicants must be mobile. Pension and sick benefit schemes are in operation. Write to:—Personnel Manager, Scholl Foot Comfort Service, 182-204 St. John Street, E.C.1.

UNQUALIFIED MAN required as perfume UNQUALIFIED MAIN required as perfunce compounder. No experience, other than a pharmaceutical training, is called for. An interesting and permanent position with pleasant working conditions. Five-day week. Apply The Dubarry Perfumery Company, near Hove Station, Hove, 4, Sussex.

JAMES WOOLLEY SONS & CO. LTD.

Manufacturing and Wholesale Chemists,

require

ASSISTANT SALES MANAGER

Four-figure salary and prospects await Four-figure salary and prospects await suitable applicant, who must have experience in the pharmaceutical trade. Established connections with retail chemists and hospitals in this area and an M.P.S. qualification would be an advantage. Repties should be addressed to the Managing Director, Victoria Bridge, Manchester, 3, giving age, full details of previous posts and present salary. present salary.

WARRICK BROTHERS LIMITED

require REPRESENTATIVES

in

N. Midlands and Lancashire

N. Midlands and Lancashire
Salesmen of high integrity are invited to apply for the above appointments with this old-established pastille and lozenge House (makers of RINSTEAD PASTILLES). Priority requirement successful selling experience to Retail Chemists. Residence in Pottery district or Cheshire preferable. Age limit will not be strictly applied to exceptional applicants. Remuneration mainly by salary with commission on increased business. Car and expenses provided. Applications, which must include full details of previous experience and perfectly applications. details of previous experience and personal background should be sent in strictest confidence to The Managing Director, 24 Wharf Road, London, N.I.

WHOLESALE (OVERSEAS)

EXECUTIVE POST IN AFRICA

Leading firm seeks young qualified chemist to be responsible for the technical direction of new company and the sale of ethical products. This is a progressive post with first-class possibilities. Initial tour of duty would be 20 months followed by 4 months leave in Europe on full pay. Travelling expenses for successful applicant and his family will be paid by the company, Free accommodation provided. Commencing salary between £2,000 and £3,000 according to age and qualifications, Applications (which will be treated in strict confidence) should be addresssed to the Managing Director, Box C 9750.

SITUATIONS WANTED WHOLESALE

LADY with many years' experience manufacturing chemists seeks change. Conversant with home and export sales, purchasing, costing and staff control. Can take complete charge of department or small organisation. Write

Situations Wanted—Continued

REPRESENTATIVE, 31, seeks permanent and REPRESENTATIVE, 31, seeks permanent and pensionable position. Established connections S.E. and S.W. postal districts, Kent, Sussex and Company driving licence held, Box

AGENCIES WANTED

NEW NATURE REMEDY in tablet form sucressfully marketed in many countries. Sole agent sought for the United Kingdom. For further details apply to Dr. A. Sturminger, Wien I, Wollzeile 20. — C 2443

WELL-KNOWN REPRESENTATIVE covering Lancs and Cheshire, would be interested to hear from reputable house re agency. Twenty years' experience cosmetics and proprietary lines, with connection of some 700 accounts, chemists, department stores and beauty salons. Box C 2455.

BUSINESS OPPORTUNITIES

MANUFACTURING CHEMISTS having modern factory in West Midlands of over 3,000 square feet area, prepared to make and market through existing sales force, good saleable lines. Wide variety of products considered. Apply Box C 9720.

MANUFACTURING CHEMISTS have space available and are willing to produce and pack any lines on profit sharing (or) basis, Reply Box C 2453.

OPPORTUNITY for enterprising chemist to take over a product of a nature greatly in demand which, with its good formula, ideal name and highly-appropriate BRAND IMAGE

name and highly-appropriate BRAND IMAGE can quickly become a national favourite by SMALL-SPACE advertising. Box C 2448.

OVER £20,000 available for the purchase of a going concern in the Pharmaceutical (non-thical), the toiletry or the cosmetics field. Under-developed businesses considered, Please write in confidence to Box C 9749.

RICE, STEELE & CO., LTD., manufacturing chemists, with over 30 years' experience have facilities for extra tablet making contracts. Quality and satisfaction guaranteed. Apply 4-7 Brabazon Street, Dublin. C 2435

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SMALL AUTOMATIC or semi-automatic filling machine for W.M. 10 c.c. bottle. Also labeller. Box C 2447.

SURPLUS CAMERAS, ENLARGERS, CINE CAMERAS & PROJECTORS, PHOTOGRAPHIC EQUIPMENT OF EVERY DESCRIPTION, SURPLUS AND OUTDATED FILM & PAPER, LARGE OR SMALL QUANTITIES. Phone, write or call:-

SPEARS
(Dept. D.), 14 Watting Street, Shudehill,
Manchester.
Phone: Blackfriars 1916
Bankers: Midland Bank, Ltd.

C 438

WE WILL PURCHASE for cash a complete stock, a redundant line, including finished or partly finished goods, packing raw materials, etc. No quantity too large, Our representative will call anywhere. Write or telephone:—Lawrence Edwards & Co., Ltd., 6/7 Wellington Close, Ledbury Road, London, W.II. Tel.: Bayswater 4020 and 7692. C 140

CONTRACTS

NEW MEDICINAL TABLETS DUTY

Irish Pharmaceutical Firm can offer tableting facilities, or would be prepared to enter into an arrangement with any British firm with a view to manufacturing their tablets here. Box 9855, Eason's Advertising Service, Dublin. Service, C 9752

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FASHION JEWELLERY, crystal, diamante, marcasite, rolled gold, beads, etc. Our Xmas range has arrived now from abroad. Please order early to get best choice. Jodez (Manchester), Ltd., 8/10 Shudehill, Manchester, 4. Phone: Deansgate 6564.

HEALTHCRAFTS VITAMINS for best formulas, best packs, best prices. Also Wheat Germ Oil capsules and unsaturated Fatty Acids formula. Full sale or return and top discounts. Trade lists from Healthcrafts, Ltd., Manor House, Worcester Park, Surrey, DERwent 3877.

NEW, in original cases. Complete, spares, accessories: Under half Manufacturers' prices. Polished steel, 2 large double door, 2 medium single door, Bacteriological Incubators. 4 Combined Washing Machines and Sterilisers for Lab. Glassware. Surgical Dressings Steriliser 36 in. x 16 in., 0–60 lb. steam pressure. Instrument Steriliser 35–60 lb. pressure. Also electrically operated Addressograph plate machine, U.S. manufacture, unused. Details, prices, Levine, 11 Vale Street, Manchester, 11.

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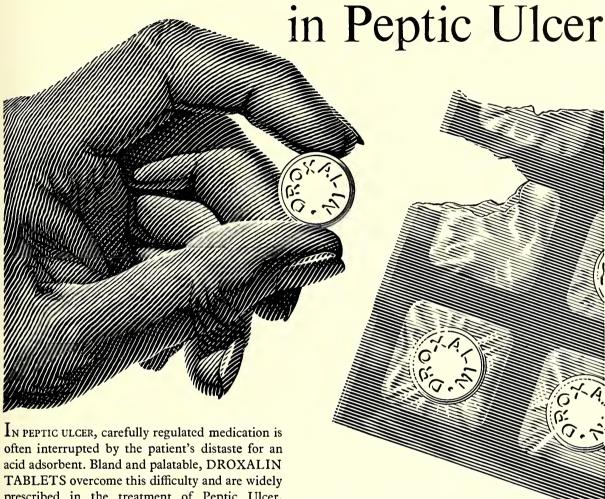
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